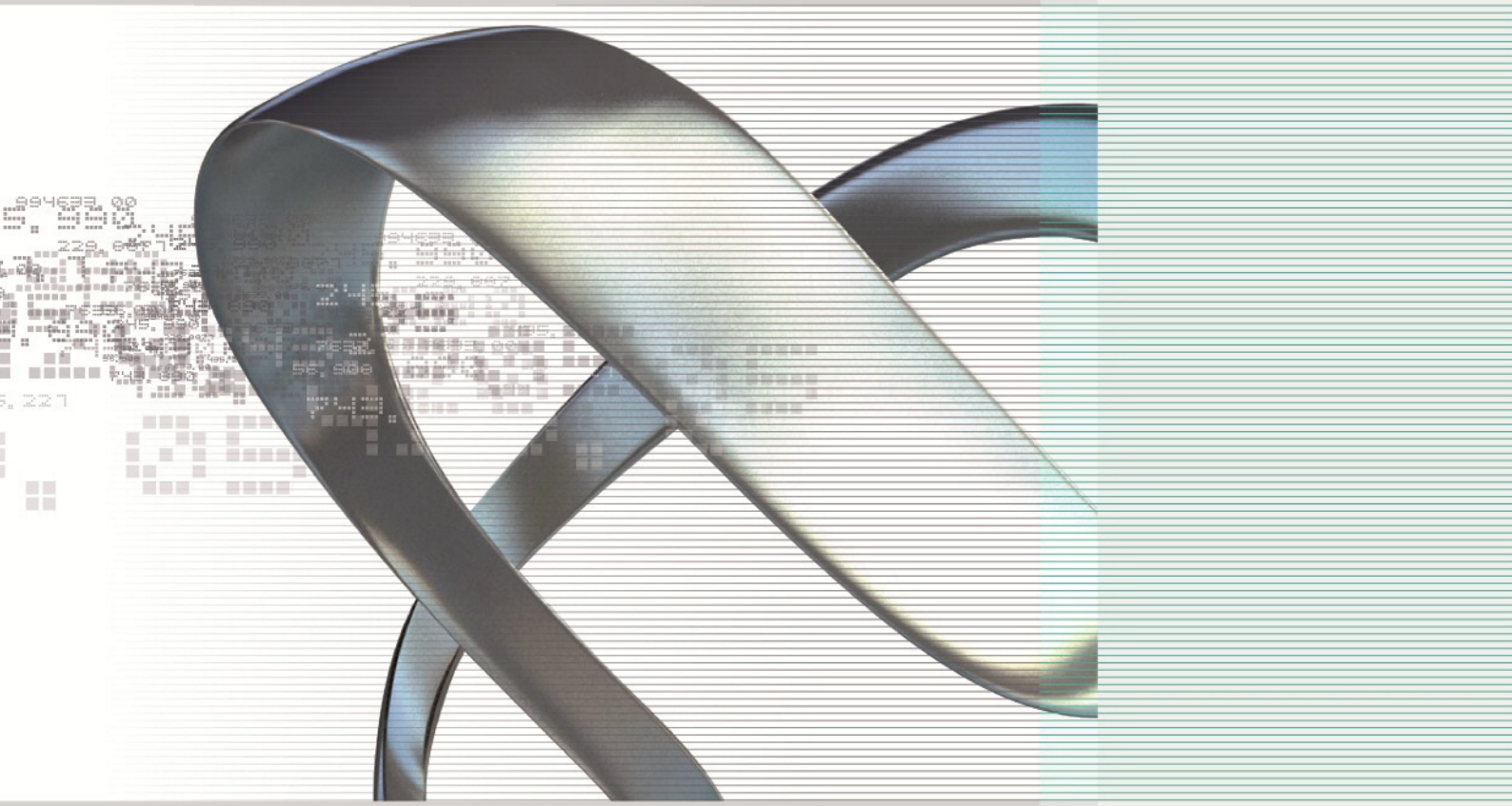
DIEHL
Metering

IZAR@SET

User Manual



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User Manual

Version: 1.3

Date of issue: 18.12.2012

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1 Introduction

1.1 Task of software

IZAR@SET is a PC application for the configuration of complex devices like heat and water meters.
You can also use it to read measured values and data logs, analyse systems and save counter logs.

1.2 System requirements

The following requirements are recommended for normal use. Depending on the application, the use of other configurations may be possible or necessary, especially regarding data security and the required functions.

Operating systems supported:
- Microsoft Windows XP with Service Pack 2
- Microsoft Windows Vista

A full compatibility with Windows 7 / Windows 8 cannot currently be guaranteed.
There are the following restrictions:

General:
- IZAR@SET can only be installed with administrator rights
- IZAR@SET can only be started with administrator rights
- Bluetooth and COM communication may be disturbed or will not work
  (This problem can be solved by using the below mentioned BT sticks)

The function of IZAR@SET can be limited by network-wide group policies.
Consequences are:

- IZAR@SET will not start if it has no access to his own directory
- No logfile and no database are created. Data exports are not possible
- Log files, database and data exports are saved in temporary directories
- The program settings are lost after each start

In this case, the network administrator should be consulted.

Recommended hardware:
- CPU with minimum clock frequency of 2 GHz
- 1024 MB main memory
- 100 MB of available hard disk space
- CD-ROM drive
- Network card for TCP/IP protocol
- Screen with minimum resolution of 1024 x 768 pixels
- Bluetooth interface (internal or external as USB stick) with Widcomm, Microsoft or BlueSoleil stack

Optional hardware components:

- Serial interface (for serial opto head)

If problems occur with your built-in or external Bluetooth device, we recommend using one of the following devices:

- Fujitsu Siemens USB Bluetooth stick V2.1 for Windows XP
- Fujitsu Siemens USB Bluetooth stick V2.0 for Windows 7

1.3 Devices

The following devices can currently be configured with IZAR@SET:

- SHARKY 775
- SCYLAR INT 8
- HYDRUS
- RAY RADIO
- CORONA ER
- IZAR RADIO COMPACT 868 ACM
- IZAR RADIO EXTERN SCR
- IZAR RADIO EXTERN M-BUS

You must also use the Installation and Operating Guide for configuring these devices. This contains detailed explanations of the device functions.

Only a limited number of parameters can be changed in the Standard mode of the program. To set other device parameters, the system must be equipped with a dongle with the necessary activation licence. More about this can be found in Section 3.2 Authorization levels.

Setting the parameters is explained in more detail in Section 5.4 Tab cards and Section 6 Configuring devices.

1.4 About the User Manual

This User Manual describes how to set up and use the IZAR@SET software. Please read the User Manual carefully before starting to work with the software.
Always have the Operating Guide for your meter available.

Various font formats are used to make it easier for you to find your way around the User Manual:

Type of information	**Formatting**	**Example**
Commands	*italics*	Command *Save profile*
(Safety) Information	**bold**	**NOTE: It is not possible to change the device during the configuration process.**
References to sections	underlined	More about this can be found in Section 3.2 Authorization levels.
Functions in Expert mode	framed by dotted line	This function is only available in Expert mode.
Functions in Test Lab mode	framed	This function is only available in Test Lab mode.
Descriptions Instructions	normal	Please read the User Manual carefully before starting to work with the software.

Symbols used:

	ATTENTION:	Damage to equipment or data loss is possible. Observe the causes and countermeasures.
	NOTE:	Additional information to simplify using the software.

1.5 Customer support

You can contact our Customer Support team as follows:

HYDROMETER GmbH
Industriestraße 13
91522 Ansbach
Germany

Phone: +49 981 1806 0
Fax: +49 981 1806 605
E-mail: support@hydrometer.de
Internet: www.hydrometer.de

2 Installation

The installation program for the IZAR@SET software can be downloaded from the Diehl / Hydrometer home page.

Proceed as follows to download:

Go to our home page at www.diehl.com and click the *Products & Solutions* register on the left. Then click *Product Download*. The Product Download section opens with its three-column overview.

Select the desired partner in the left column: *Hydrometer.*
Select the product heading in the centre column: *Metering Systems.* This heading opens.
Now select the product: *IZAR@SET*.
Select the category in the right column: *Software*.

The software (*.exe) is available below this overview. Click the software title (light green) to start the download.

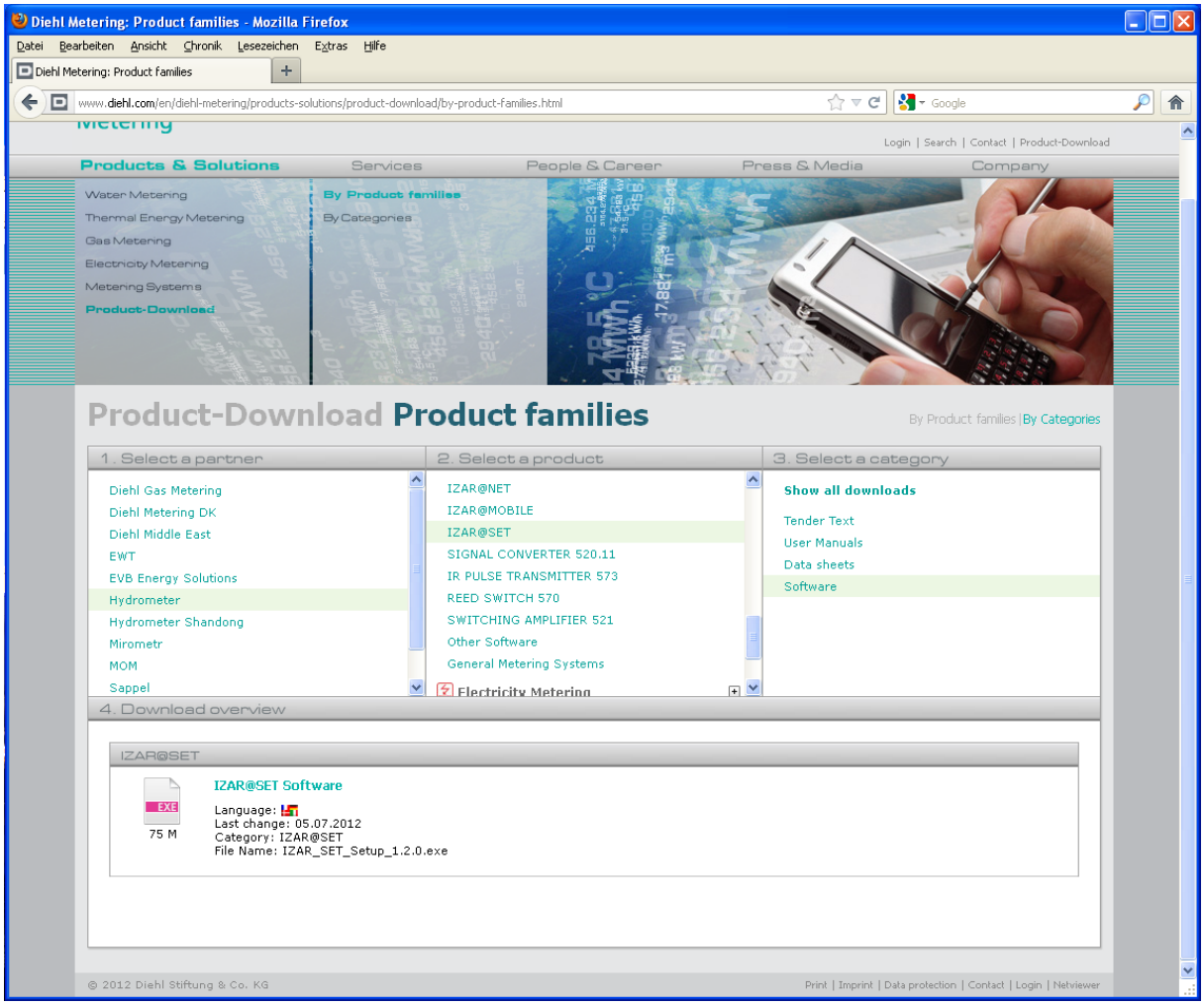

Fig. 1: Download section of home page

The installation is carried out in the DIEHL Metering program directory on your local hard disk.

NOTE

This software enables you to run the application in Standard mode, in which you can only read data and change a few parameters. To run the application in Expert mode or Test Lab mode, you need a dongle with the relevant authorization, see Section 3.2 Authorization levels.

3 Starting IZAR@SET

3.1 Starting the software and logging in

When starting the program from the Start menu, you must log in. The user name is: *admin*, the password is *radio*.

Fig. 2: Login

3.2 Authorization levels

In **Standard mode** you can read the meter, read logs and save logs as csv files, but you can only change a few items of data.

For the **Expert mode**, you need a USB dongle with the respective authorization. Depending on the write protection of the device, you can change parameters in this mode, but not data relevant to verification.

To use the **Test Lab mode**, test centres need a special USB dongle with more functions than the dongle for Expert mode. In Test Lab mode you can change fundamental device settings, including verification data.

You can purchase the authorization for Expert mode or Test Lab mode from Hydrometer, who will then provide you with the necessary dongle. Connect the dongle to your PC/laptop and restart the software. All functions of the relevant mode will then be available for your use.

NOTE

Your dongle must always be connected for working in one of the two advanced modes. This is necessary to provide access to the advanced functions.

4 Connecting devices to IZAR@SET

NOTE

Read the separate Operating Guide for the device before reading it with IZAR@SET.

IZAR@SET can read devices and write configurations to devices using a Bluetooth opto head or a serial interface.

NOTE

The Bluetooth opto head is equipped with an internal battery. Keep the battery sufficiently charged.

If you have a PC or laptop with a Bluetooth interface, follow the instructions in Section 4.1 Setting up a Bluetooth connection.

If your PC or Laptop is NOT equipped with a Bluetooth interface, follow the instructions in Section 4.2 Setting up a Bluetooth connection with USB Bluetooth stick.

If you use a serial opto head to connect the device and PC/laptop, follow the instructions in Section 4.3 Setting up a connection with serial opto head.

4.1 Setting up a Bluetooth connection

If you have a PC or laptop with a Bluetooth interface, set up the connection between the software and device as follows:

1. Start the IZAR@SET software and log in (see Section 3.1 Starting the software and logging in).
   The main dialogue window appears.

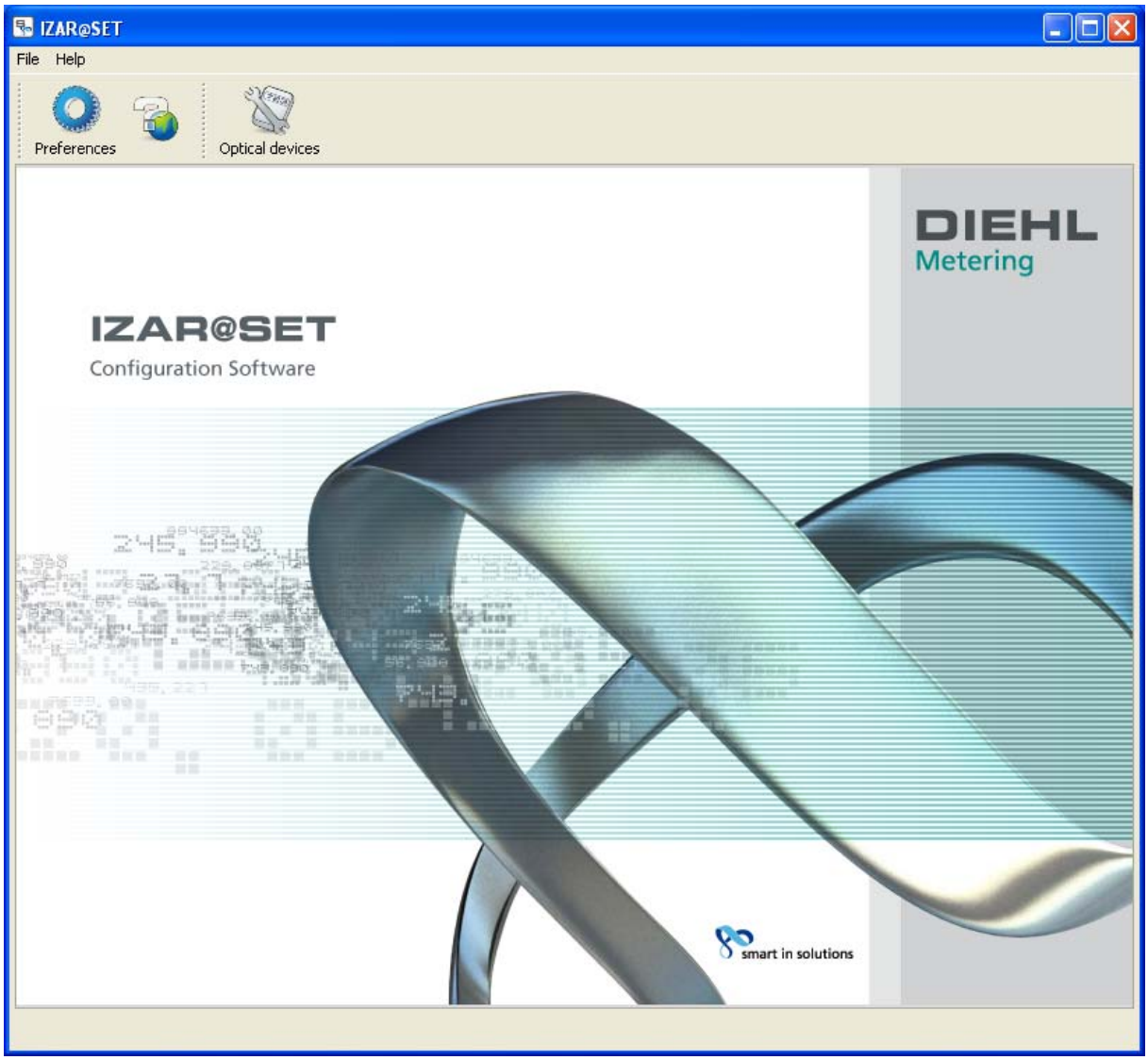

Fig. 3: Main dialogue window

2. Switch on the opto head by sliding the control to ON.
3. Place the opto head on the optical interface of the meter.

Fig. 4: Opto head on system device and switched on

4. Click the *User Preferences* symbol. Click *Communication* in the menu on the left. First, select at *Bluethooth opto head type*, the opto head which you use, either IZAR OH BT or Techem Opto Head 2.Select the second option and set the desired COM interface.

The COM interface for the Bluetooth settings is assigned by the operating system or selected (Control Panel > Set up new Bluetooth connection).
Confirm and close the User Preferences by clicking *OK*.

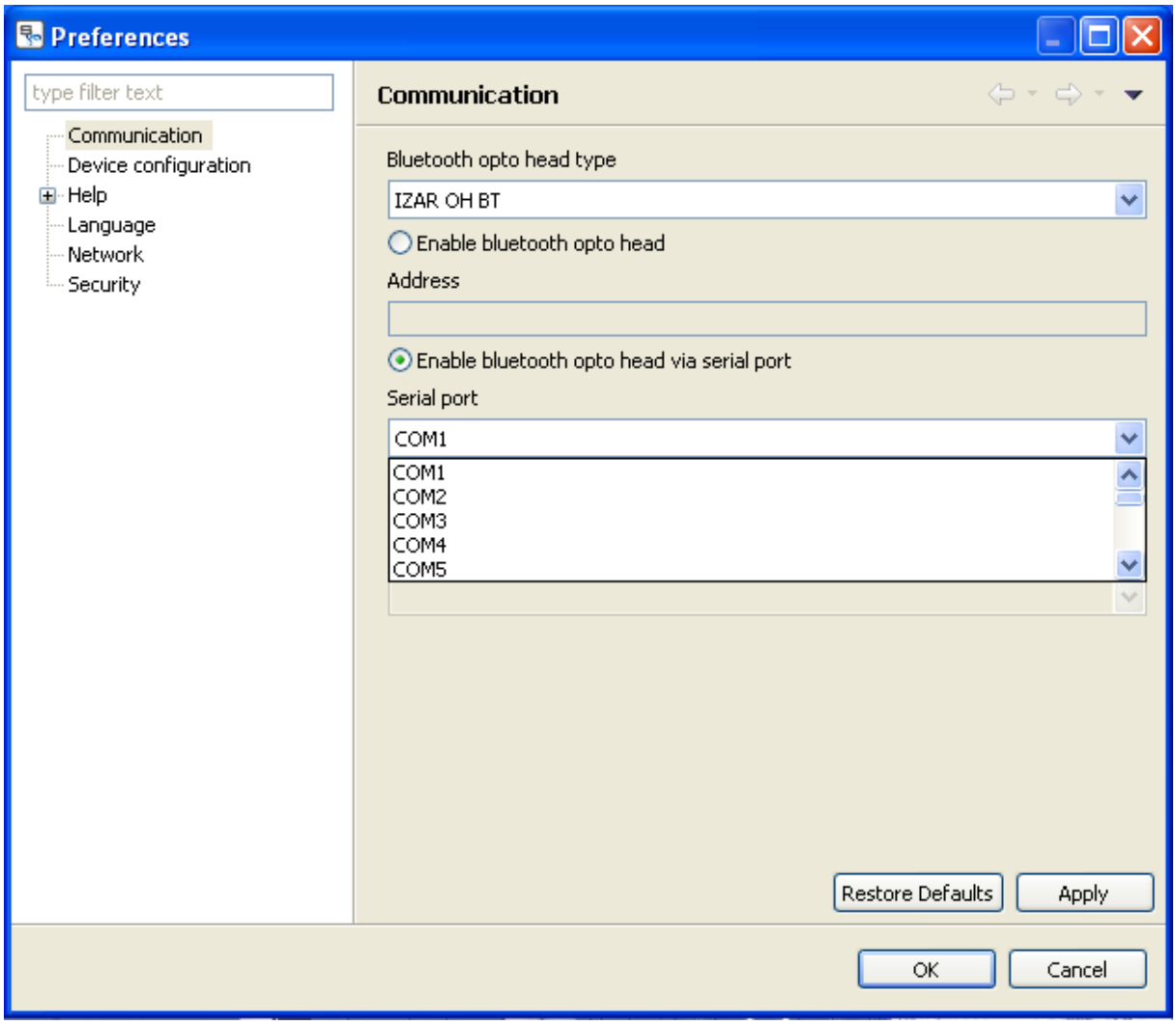

Fig. 5: Communication

The Bluetooth connection is set up. The blue lamp on the opto head lights if set-up is successful.

Fig. 6: Bluetooth connection complete

5. Click the *Optical Devices* symbol to automatically identify the device to be configured. While the software is scanning for the device and reading the data, a progress bar in the status line shows the status.

NOTE

A running process can be aborted with the red button (next to the progress bar).

You then pass to the configuration phase. A user interface specially for the device appears for setting the specific parameters of the device.

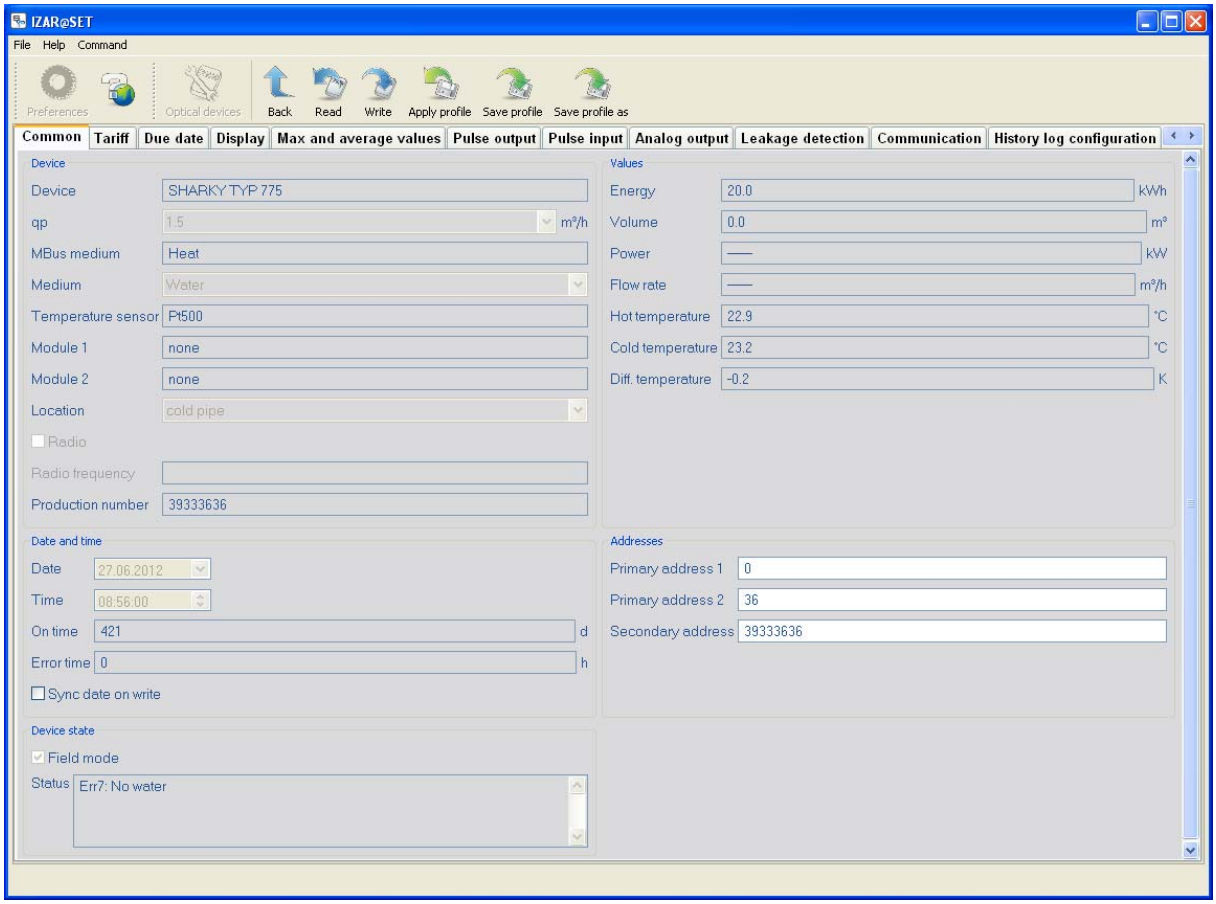

Fig. 7: Example User interface

4.2 Setting up a Bluetooth connection with USB Bluetooth stick

If your PC or laptop is not equipped with its own Bluetooth interface, use a USB Bluetooth stick (see Section 1.2 System requirements).

1. Insert this USB Bluetooth stick in a free USB slot of your PC or laptop.

   Carry out the following if using the stick for the first time:
   Install the driver software for the USB Bluetooth stick (takes place automatically or use the enclosed CD).
   Add a new wireless device to your PC or laptop. Do this by selecting the *Bluetooth Devices* folder in the Control Panel of your PC/laptop. Click the *Add Wireless Device* function and follow the instructions that appear.

NOTE

Make a note of the Bluetooth address of the opto head for the setting in IZAR@SET (the IP address can be found under the properties of the opto head)!

2. Start the IZAR@SET software and log in (see Section 3.1 Starting the software and logging in).
   The main dialogue window appears.
3. Carry out steps 2 to 6 as described in Section 4.1 Setting up a Bluetooth connection. Click the *User Preferences* symbol. Click *Communication* in the menu on the left. Select the first option and enter the MAC address of the opto head. Confirm and close the *User Preferences* by clicking *OK*.

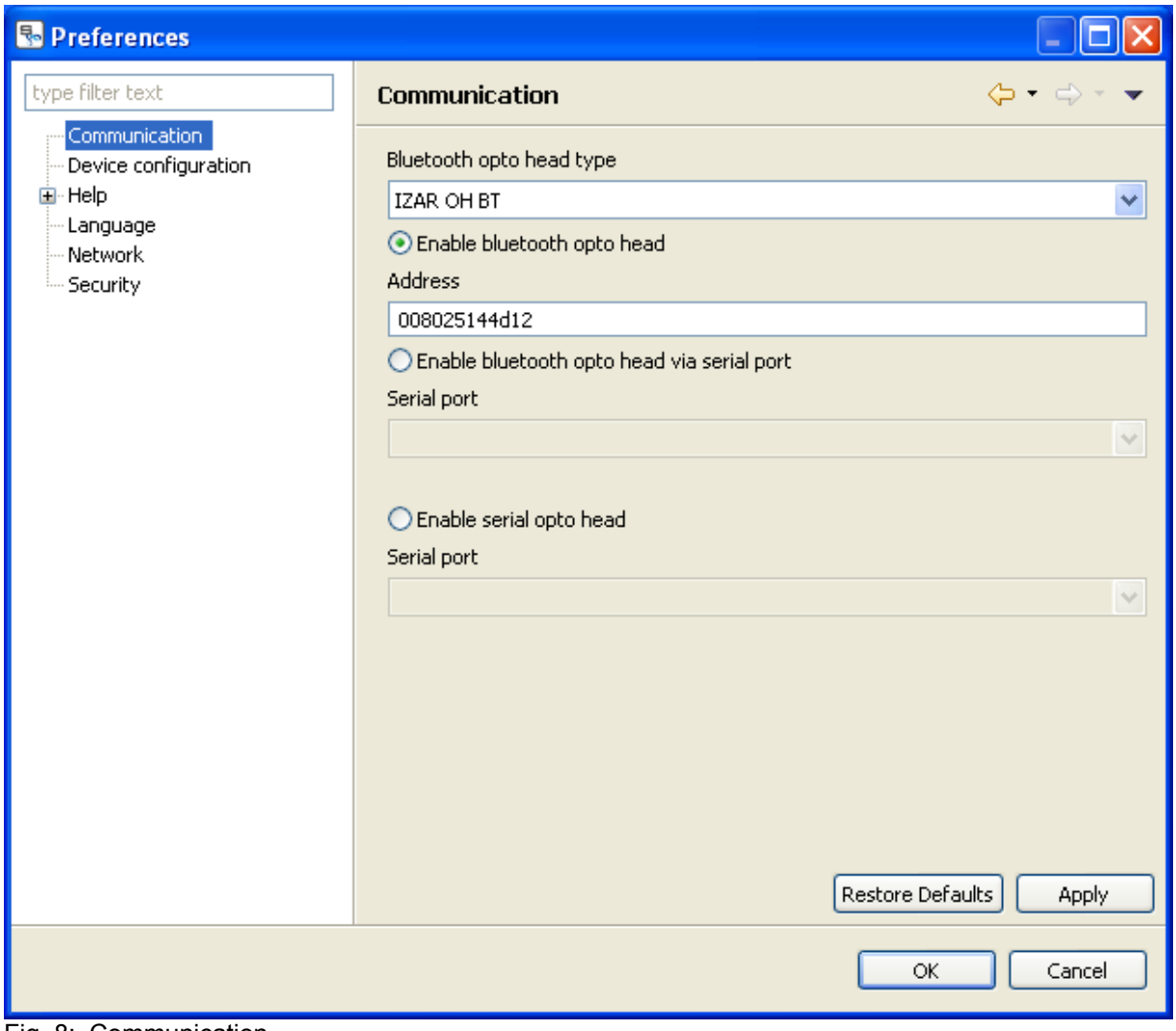

Fig. 8: Communication

4.3 Setting up a connection with serial opto head

If you wish to set up the connection between software and device over a serial interface, proceed as follows:

ATTENTION

Only IRDA opto heads are supported.

1. Start the IZAR@SET software and log in (see Section 3.1 Starting the software and logging in).
   The main dialogue window appears.
2. Connect the serial opto head to a serial port of your PC/laptop.
3. Carry out steps 2 to 6 as described in Section 4.1 Setting up a Bluetooth connection. Click the *User Preferences* symbol. Click *Communication* in the menu on the left. Select the third option and set the desired interface. Confirm and close the *User Preferences* by clicking *OK*.

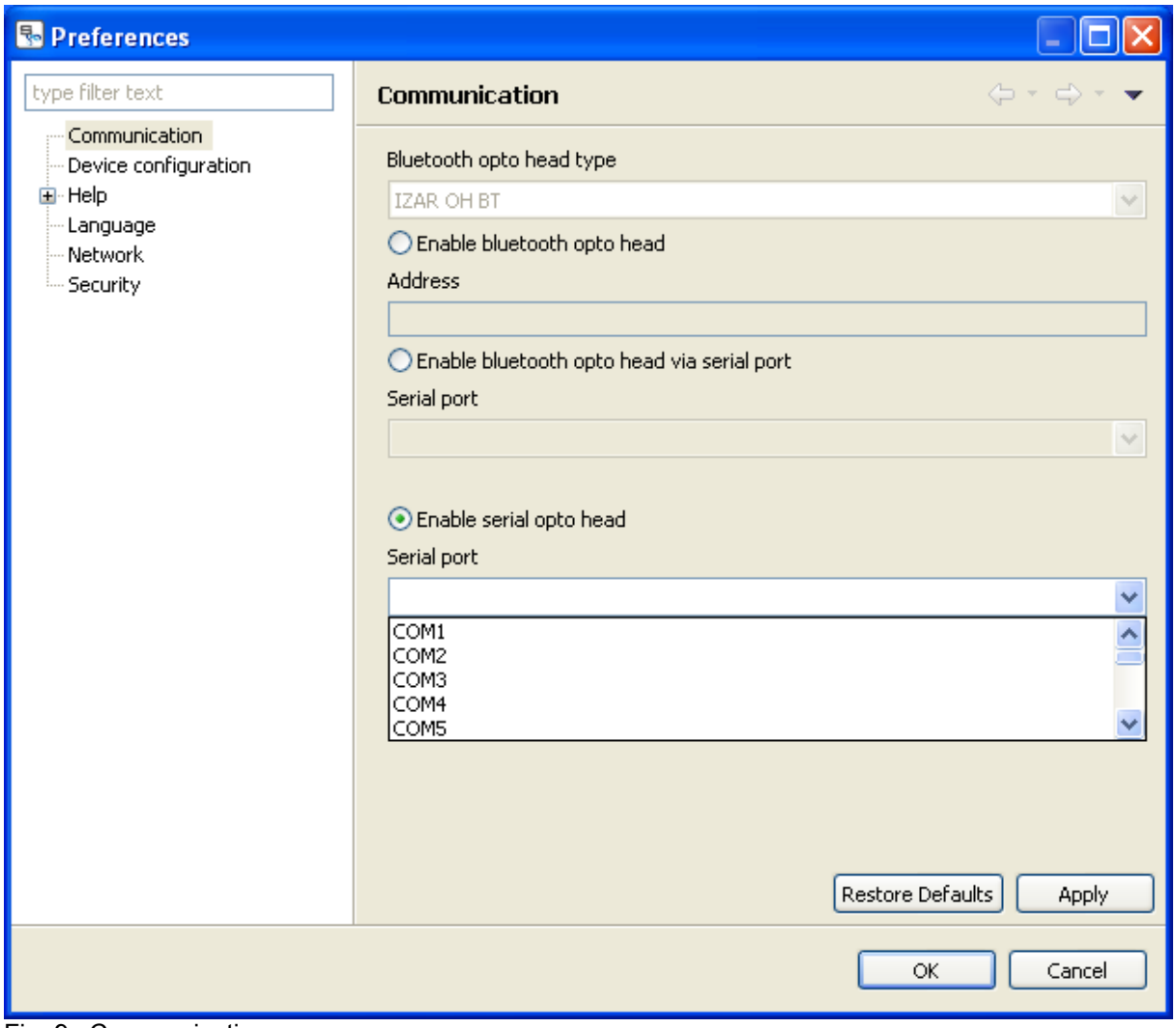

Fig. 9: Communication

4.4 User preferences

By selecting the *User Preferences* menu option in the main dialogue window you access the dialogues for the general application settings. You can set relevant conditions for the application here.

4.4.1 Device configuration

The functions in the *Device Configuration* dialogue are not available for all devices or all parameters.

The functions in the *Device Configuration* dialogue are only available in Expert mode.

Allowing writing of devices without prior reading
It is sometimes necessary to configure a number of identical devices with the same setting. To speed up processing, this configuration should be possible without prior reading (see Section 6.3 Working with profiles).

Allowing writing of devices if invalid parameter states exist
It is not possible to write a device if errors still exist in the fields of individual tab cards. This function explicitly allows writing despite the existence of errors, but you are notified of the error (see Section 6.1 Input aids).

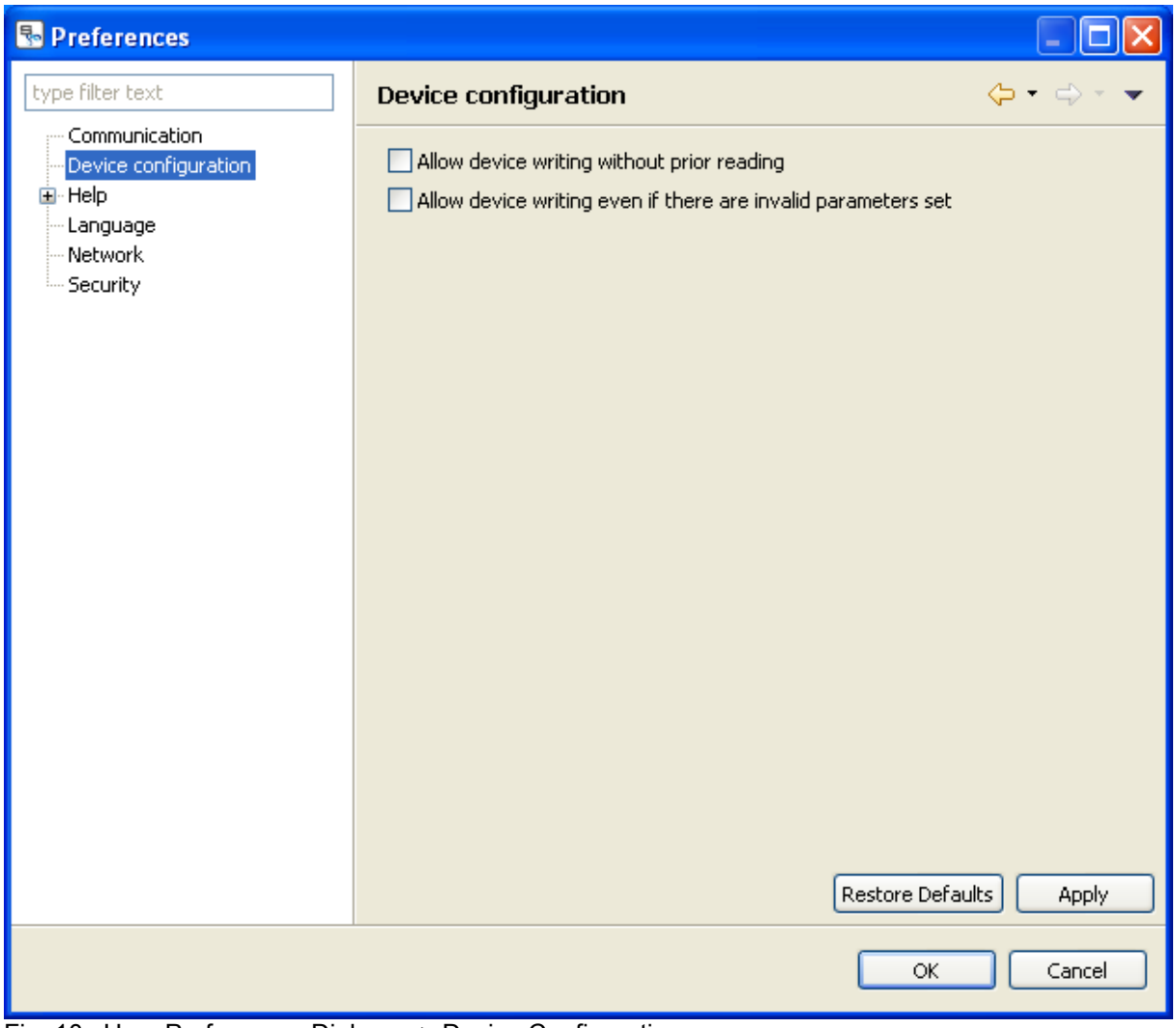

Fig. 10: User Preferences Dialogue > Device Configuration

4.4.2 Help

The *Help* dialogue can be used to define the display of the help texts. You can choose whether the help appears in the dynamic help view or is opened in a web browser.

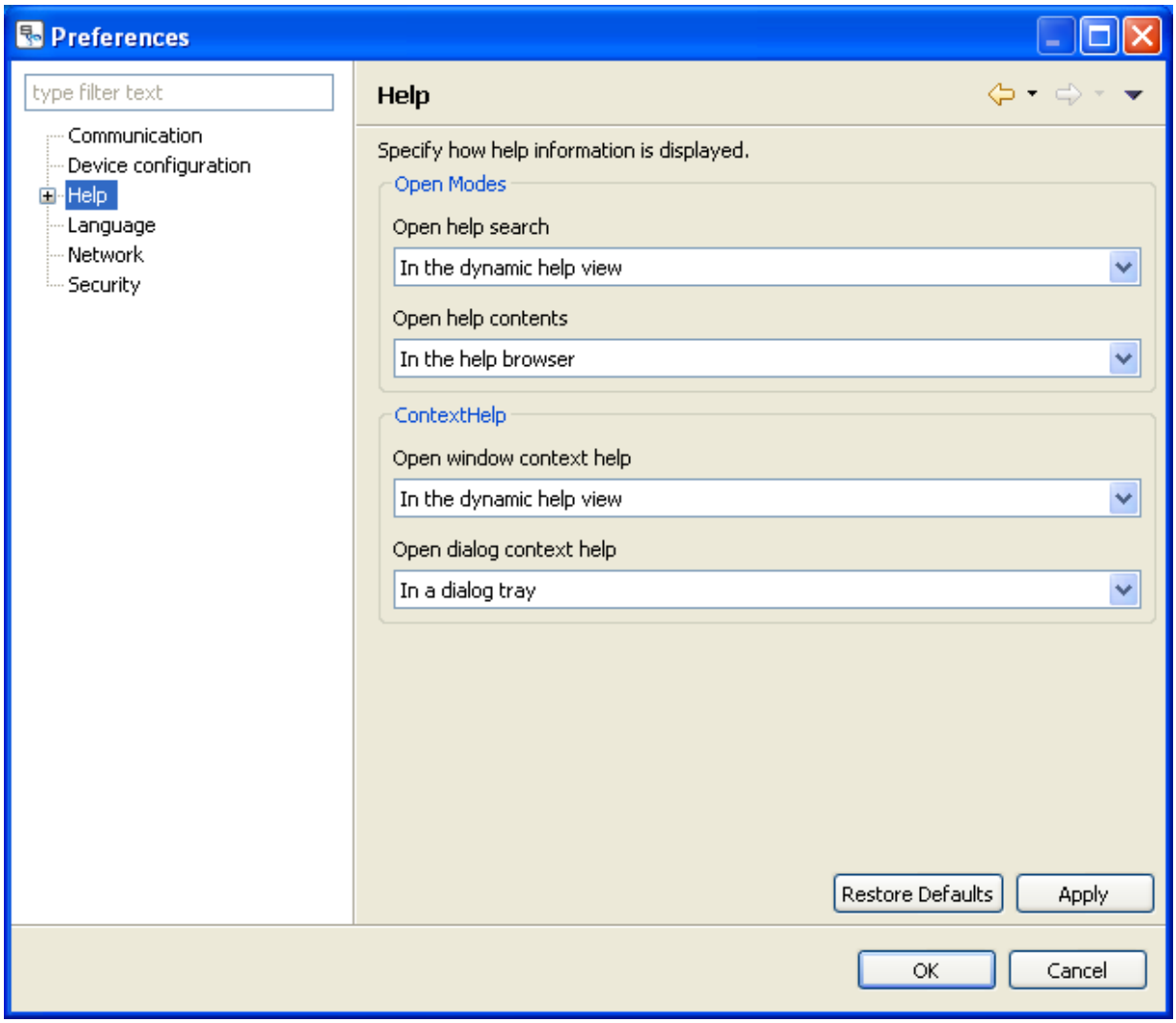

Fig. 11: User Preferences Dialogue > Help

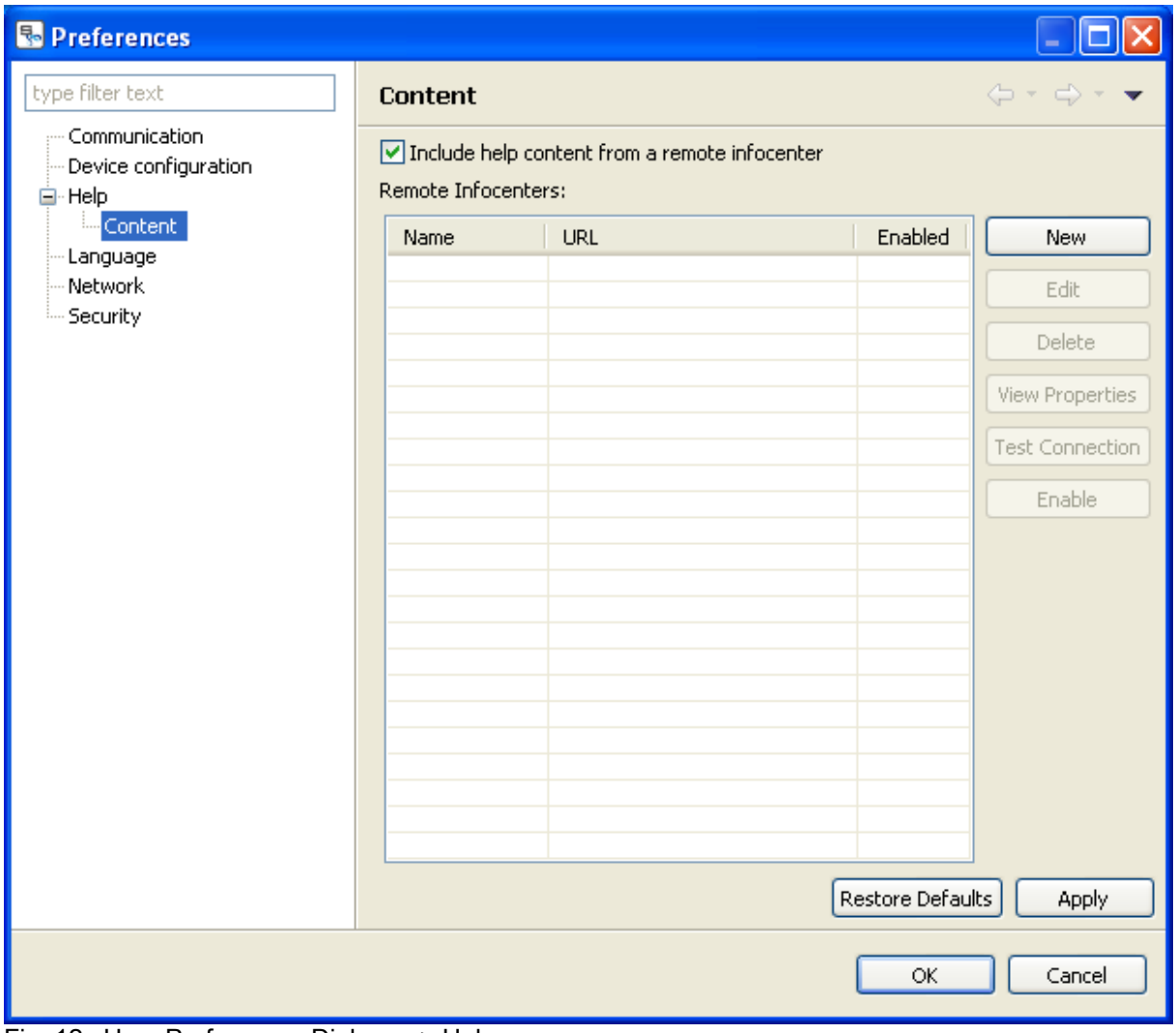

Fig. 12: User Preferences Dialogue > Help

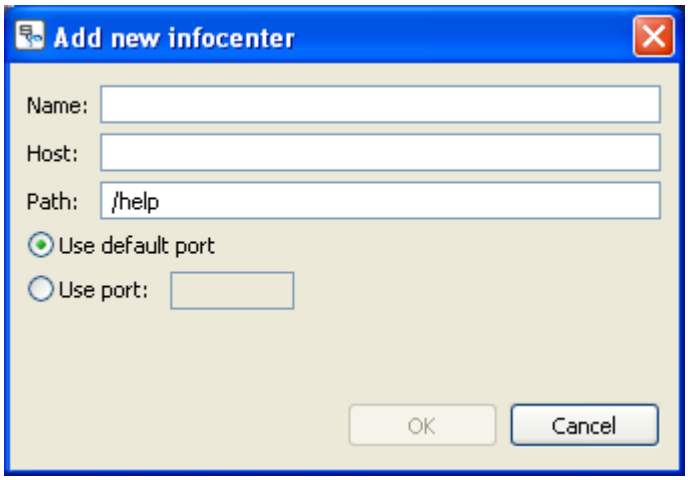

Fig. 13: User Preferences Dialogue > Help, Add Info Centre

4.4.3 Communication

The *Communication* dialogue is for specifying how IZAR@SET communicates with the devices connected to it. The settings shown below are possible:
Detailed information on connecting devices to the software can be found in the preceding Sections 4.1 Setting up a Bluetooth connection, 4.2 Setting up a Bluetooth connection with USB Bluetooth stick and 4.3 Setting up a connection with serial opto head.

- Bluetooth opto head (IZAR OH BT):
  Enter the Bluetooth address (printed on the opto head).

NOTE

This option only functions if a Bluetooth stick from Microsoft, Broadcom/Widcomm or Bluesoleil is installed in the system. The following option must be used for other Bluetooth stacks (e.g. Toshiba Bluetooth software).

- Bluetooth opto head (IZAR OH BT) via serial: Enter a virtual COM port to which the Bluetooth opto head is connected. Configure the virtual COM port in accordance with the User Guide for your Bluetooth stick.

- Serial opto head: Enter the COM port of the serial opto head

4.4.4 Security

The *Security* dialogue is used to define whether IZAR@SET is to change the password and/or radio key on the device during device configuration.

You can only change these settings in Expert mode.

Keep password
The device radio key is not changed.

Set radio key to default
If activated, the device is rewritten with the default radio key.

Set own radio key
If activated, the device is rewritten with the radio key entered.

ATTENTION

Note that the radio receivers must also have the corresponding radio key.

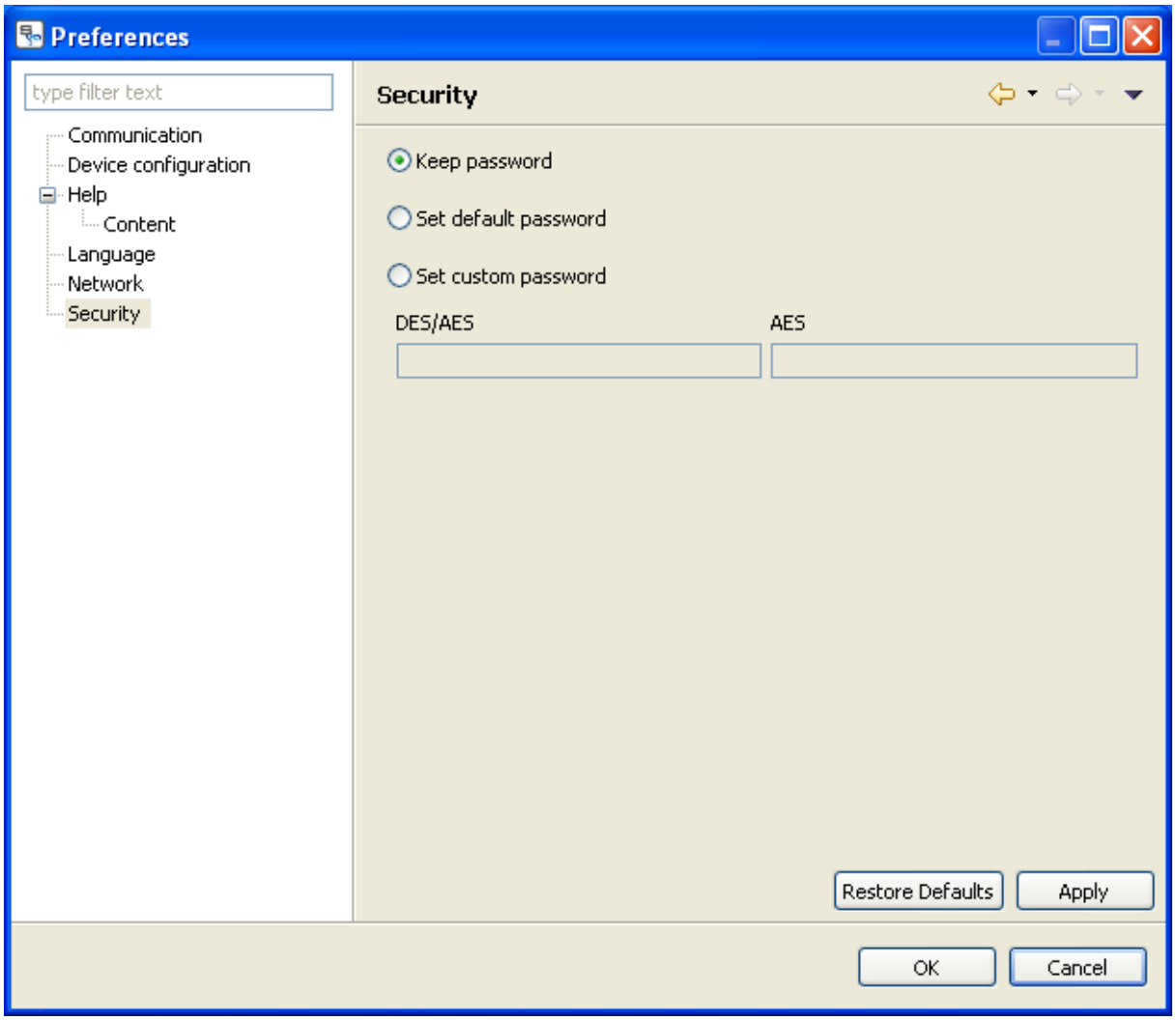

Fig. 14: User Preferences Dialogue > Security

4.4.5 Language setting

The *Language Setting* dialogue is for setting the language in which dialogues and texts are displayed in IZAR@SET. The language setting also changes the display of the date or numerical values.

The following languages are possible:

- German
- English
- French
- Hungarian
- Polish

NOTE

After changing the language, IZAR@SET must be restarted for the change to become effective.

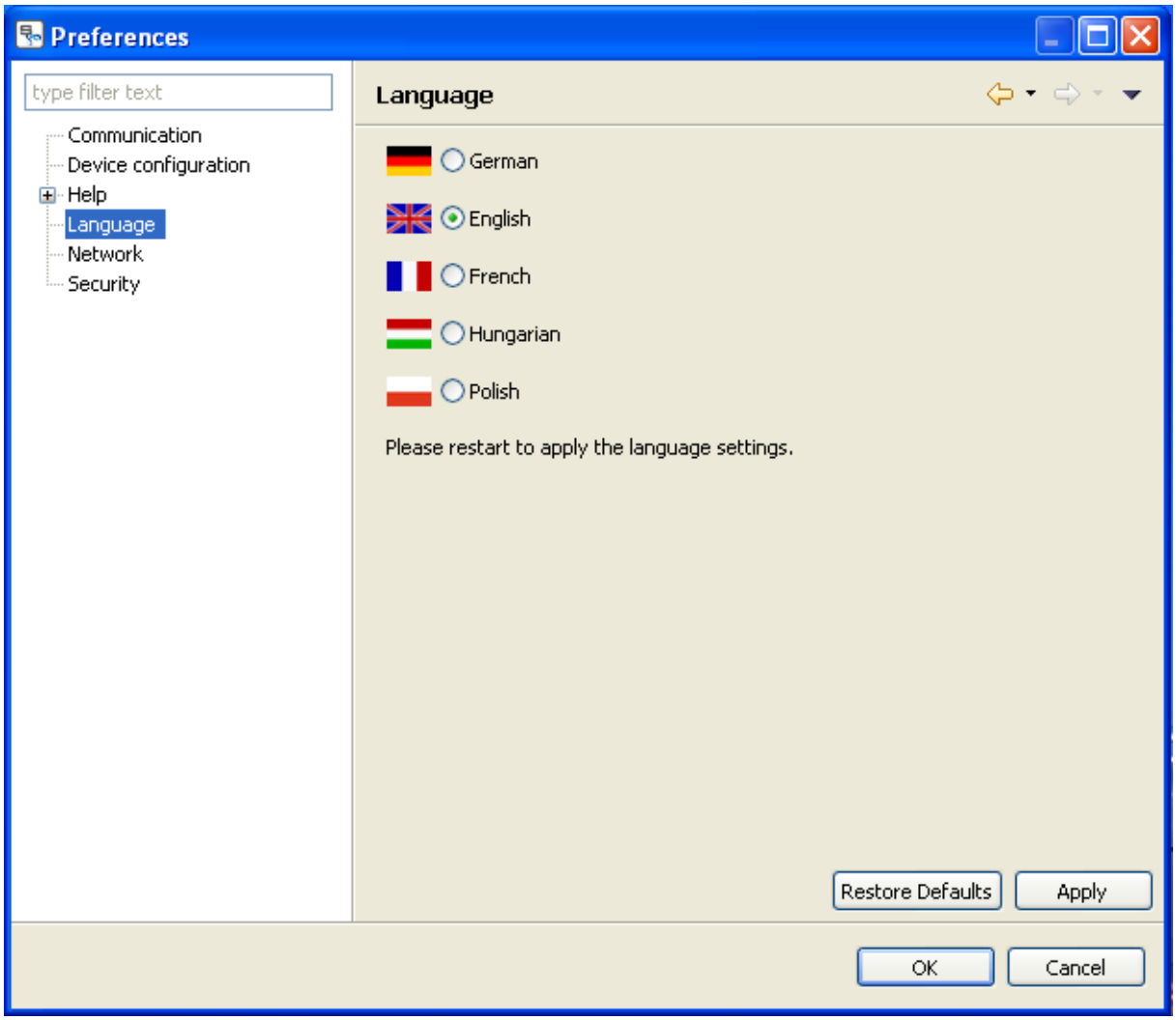

Fig. 15: User Preferences Dialogue > Language Setting

5 Setting up IZAR@SET

5.1 IZAR@SET user interface

The figure below shows the basic design of the user interface and the following sections provide more information about the various parts.

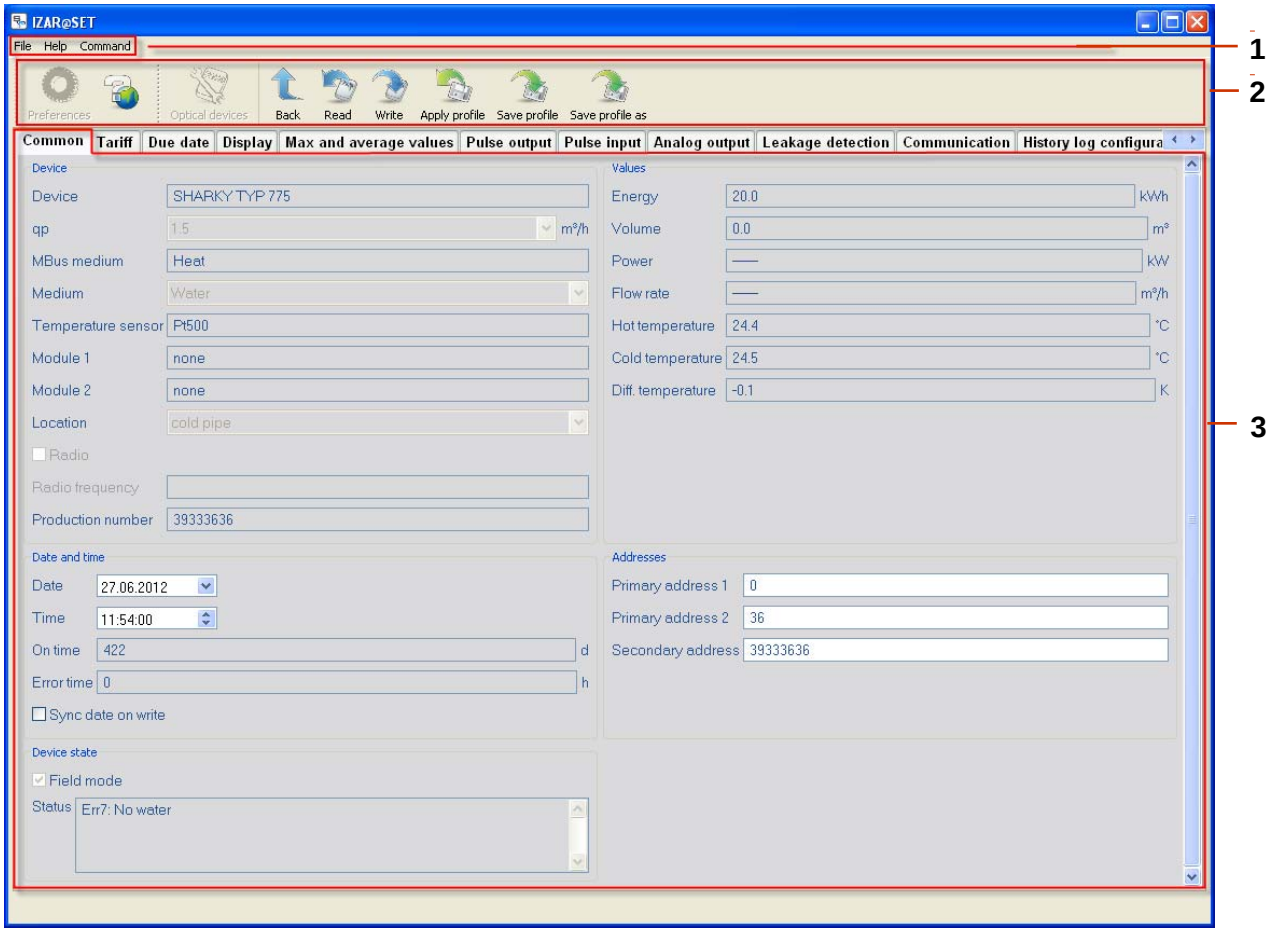

Fig. 16: Example User interface

Legend:

1 Menu bar
2 Toolbar
3 Configuration dialogues (arranged as tab cards)

5.2 Menu bar

The *Optical Devices* button in the main menu of the program is used to read the device connected.
The following commands are then available in the menu bar:

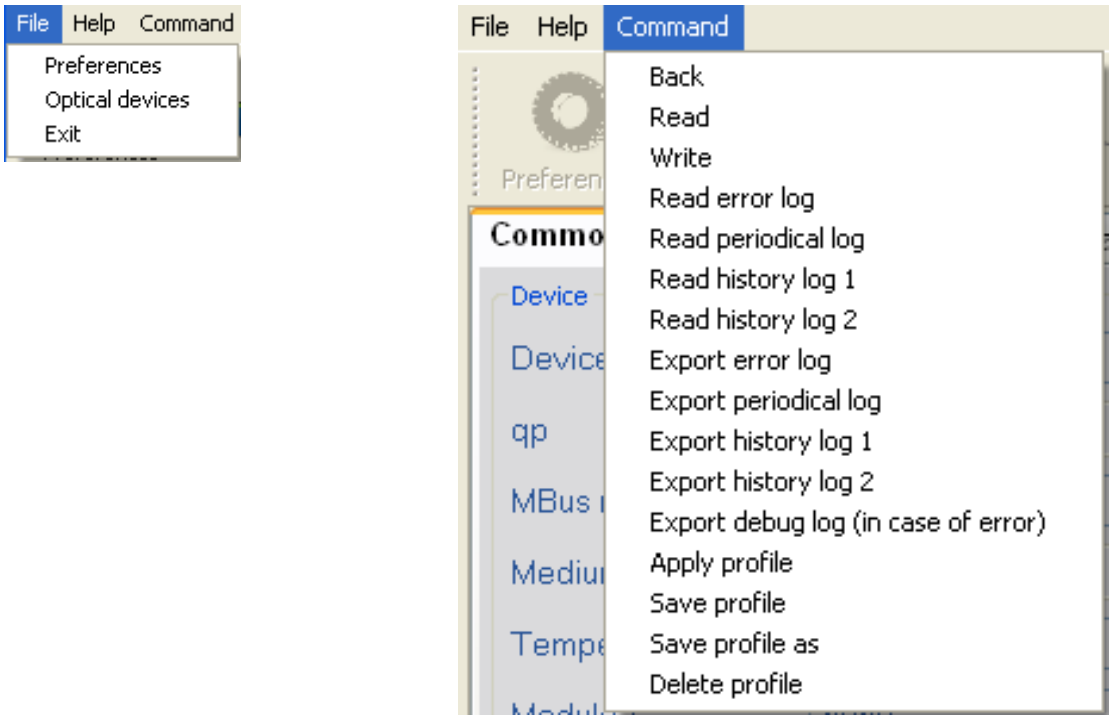

Fig. 17: Commands in the menu bar

Back – opens the main menu
Exit – closes the program

Read – the device is read again (only the current values are shown, the logs are called up via the *Commands* menu)
Write – writes changes to the device

Read – reads the various logs

- *Error log*
- *Periodical log*
- *History log 1*
- *History log 2*

The associated tab cards are filled.

Export – of the various logs
Writes the selected log (see above) as csv file to the “Data” folder in the program directory C:\Programs\Diehl Metering\IZAR_SET\IZAR.
The file name consists of the production number of the device, the name of the log and the time of saving.

Create diagnostic file (if error occurs)
This command creates an encrypted diagnostic file, which can be evaluated by Customer Support at Hydrometer if an error occurs. In this case, as much data as possible is read from the meter, which means this operation can take a very long time. You should therefore only use this command in the event of an error.

Clear:

NOTE

The device must allow the respective clear function.

The clear function is only available in Expert mode and Test Lab mode.

- Clear operating hours
- Clear error time
- Reset leakage alarms
- Clear error log
- Reset the device and all logs

Profiles:

- *Apply profile*:
  Here you call up a stored profile of a device configuration. The settings from this profile are applied to the current device.
- *Save profile*:
  You transfer the changes made to the device settings to the current profile. A profile must be available and selected.
- *Save profile as*:
  You transfer the changes made to the device settings to a new profile.
- *Delete profile*:
  You delete a selected profile.

Detailed information can be found in Section 6.3 Working with profiles.

5.3 Toolbar

You can use the symbols in this bar to read parameters, change parameters for the device, and create, delete and apply profiles to the device.

NOTE

Your changes are not saved in the device until you execute the *Write* command in the menu. You can check this by reading the current parameters from the device with the *Read* command. More information can be found in Section 6 Configuring devices.

The following commands are available in the toolbar:

Fig. 18: Toolbar

Back – opens the main menu

Read – the device is read again (only the current values are shown, the logs are called up via the *Commands* menu)

Write – writes changes to the device

Profiles: see Section 5.2 Menu bar

5.4 Tab cards

5.4.1 Display of tab cards

Related data in the tab cards can be grouped with a frame. The data groups are arranged according to window size.
The following figure shows you examples of the data groups.

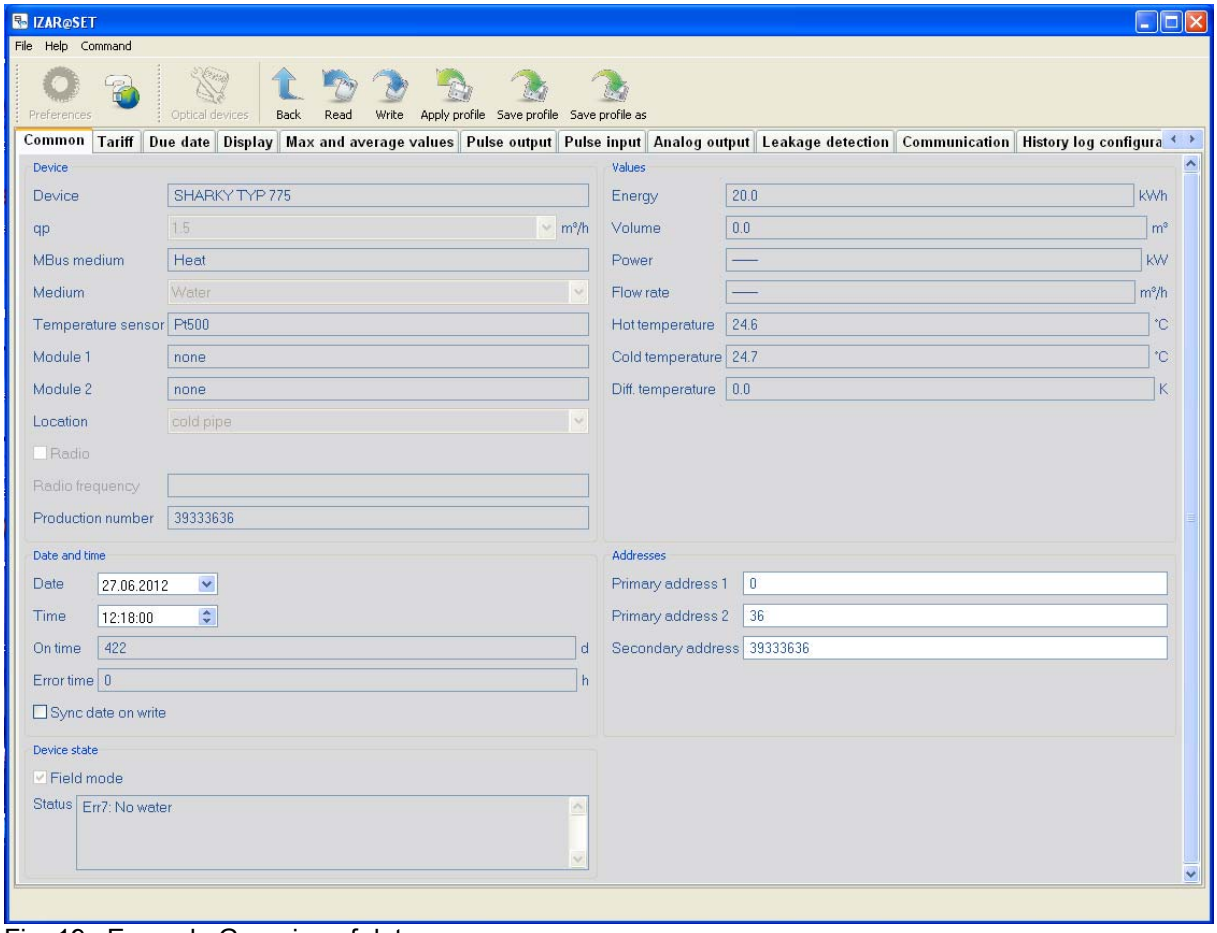

Fig. 19: Example Grouping of data

A tab card is displayed by clicking its tab. The tab of the active tab card is highlighted.
The tab cards can be opened in any order. You can use the arrow keys to the right of the tabs to change to any tab cards not displayed in the window.

The device data are distributed to and shown on various tab cards. You can carry out calibration of your device in the individual tab cards.

You can configure your device for other tab cards, e.g. set the tariff settings and set days, define maximum and mean values, calibrate leakage detection or evaluate stored data.

5.4.2 Example of *"common"* tab card from SHARKY 775

The tab card shows general data for the device.

The data are combined in logical groups:

- Device – full identification and device designation
- Values – meter counts
- Date and time – can be synchronized to the PC in Expert mode
- Addresses – primary and secondary addresses of the device can be changed
- Device status – shows the protection level and current error messages of the device

You can change the date, time and addresses of the device.

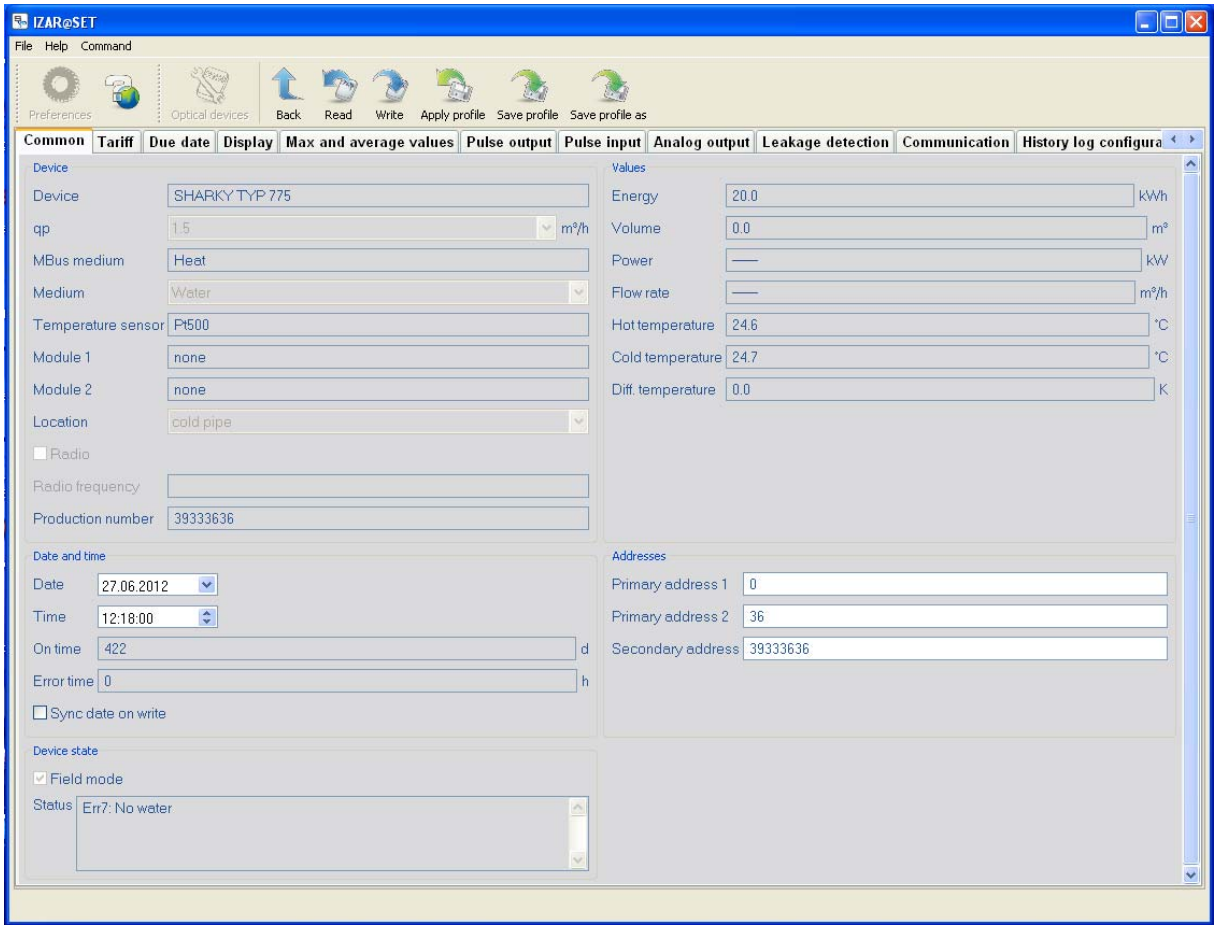

Fig. 20: Example of *"common"* tab card SHARKY 775

6 Configuring devices

6.1 Input aids

The following input aids are provided to simplify entering values:

Dates are entered using a calendar display. This opens when you click the button on the right of a date field. You can also enter a date directly in the input field.
In addition, discrete values are entered using selection fields that only offer you a choice of valid values.

Lists (right-left lists) are available for you to assign mass data. Here the available fields are shown in the left column and the fields already selected in the right column.

Multi-line windows are used to display log data. Pop-up windows appear if questions or messages must be taken into account when changing data.

Many parameters have side effects.
For example, the parameter that defines the tariff mode influences another field such as the tariff limit. These relationships are indicated in the user interface by a yellow background to highlight parameters that are changed when another parameter is changed.

Invalid inputs are indicated in a similar way. If an input field contains an invalid value or its value becomes invalid because another parameter has been changed, the background of the invalid parameter is marked red.

6.2 Configuring a device

When you order a device, you will be asked for your required parameters and these will already be set on delivery. If you have not provided any information with your order, the device will be supplied with the default settings.

NOTE

Users in Standard mode can only change a limited number of values. More parameters can only be changed if the system is equipped with a dongle with the relevant licence activated.

To access device configuration, click *Read* in the main dialogue window. The device is first read and its current values shown in the user interface.

You can then start changing the device parameters.
You can change as many parameters as you wish, as the changes initially have no effect on the device, but are only made in IZAR@SET. Every change is checked for valid inputs, so invalid inputs or the consequences for dependent parameters are shown immediately.

Your changes are not saved in the device until you execute the *Write* command. You can read the current device values again with the *Read* command. Unwritten changes to parameters are overwritten and set to the values of the device (see Section 6.3.2 Apply profile).

NOTE

Ensure that the opto head remains connected to the device during the configuration and that the opto head is switched on or connected to the PC.

6.3 Working with profiles

To configure many devices with the same settings, you can save settings for each type of device as profiles. A profile comprises only the changed parameters.

6.3.1 Creating a profile

1. To create a profile, first read the device.
2. Carry out any changes required for the profile.
3. Execute the command *Save profile as*. Only the changes made are logged and saved as a profile.
4. You can also extend a profile retrospectively. This is done by making the device changes necessary for the extension and saving these under the existing profile.

NOTE

The profile is saved in the software. It is not transportable, but only available via the software.

6.3.2 Apply profile

1. First read the device then open the *Apply profile* command in the menu bar.
2. Select one of the stored profiles. The changes are made in the IZAR@SET software.
3. Press the *Write* button to save the changes.
4. Read the device again to make sure the changes have been saved successfully.

If you have selected the command *Device configuration > Allow device writing without prior reading* under User Preferences, a profile can be transferred to the connected device without prior reading. At least one device must be read previously, however, because you can only execute the *Profile* command from the device view.

NOTE

Profiles can only be applied to devices of the same generation.

6.3.3 Delete profile

1. Use this command to delete a profile you no longer require.
2. Select the profile to be deleted (if several profiles exist) and confirm the deletion by clicking *OK*.

6.4 Changing devices

NOTE

It is not possible to change the device during the configuration process.

To configure another device, first finish the current configuration process completely and return to the main dialogue of IZAR@SET.
Connect a new device. Start a new configuration using the command *Optical Reading* for device detection.

6.5 Ending configuration

When you have made all the required configurations, close the configuration process completely by returning to the main dialogue of IZAR@SET. Exit the program using the menu *File* > *Exit*.

7 Help

Selecting the *Help* menu option in the main dialogue window gives you access to the User Manual and other information.

Fig. 21: Help menu

Selecting the *About* menu option shows the licence information.

Fig. 22: Information about IZAR@SET

Help opens the User Manual.

8 Legal notices

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Diehl Metering
Industriestraße 13
91522 Ansbach – Germany

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a) the ownership of the hardware sold to him (CDs and manuals),

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(2) If certain individual functions do not work in certain constellations exactly as described in the manual or as expected under the circumstances, this shall not be deemed to constitute a defect. On the contrary, the program shall be considered as free of defects regarding a certain function provided the promised function in individual cases is provided in a different but not substantially less convenient way than would actually be expected. (Example: In individual cases, the program is unable to show a certain response/trend graphically, but in a statistical list in a barely less vivid way).

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LICENSOR. If the LICENSOR'S second attempt to rectify the defect fails, the customer may either reduce the purchase price or cancel the contract and possibly claim damages.

(4) The LICENSOR is also liable to the customer for ensuring that the use of the software does not violate third parties' intellectual property rights reported in or for Germany at the time of handing over the software to the customer and at this time either already published or certainly available with suitable research such that the LICENSOR either did discover or should have discovered these intellectual property rights during a standard inquiry into the existence of intellectual property rights. If legal action is threatened or taken by third parties due to alleged violation of the intellectual property rights of third parties by the software, the customer shall notify the LICENSOR without delay. In this case, the LICENSOR shall indemnify the customer for all financial disadvantages arising out of such action, but only if

a) the customer notifies the LICENSOR of the assertion of the claim by the third party without delay (within one week), and if the customer

b) also grants the LICENSOR the full authority to conduct any process in its own name for the customer (representative action).

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Art. 5 Purchase price and default on payment

The purchase price is based on the version of the order catalogue valid at the time of receiving the order. However, only the price confirmed to the customer by the LICENSOR in writing shall be final and binding. Interest at 8 % above the respective base rate of the European Central Bank (ECB) shall be payable in the event of default on payment.

Art. 6 Confidentiality

Neither party shall disclose information to third parties about the mutual business relationship or any information of a confidential nature about the other party obtained in the course of this business relationship; furthermore, both parties shall use such information exclusively for the purpose of fulfilling this agreement and not for their own purposes, shall only make this information accessible to their employees who need it for fulfilling this particular purpose, and who, either through their employment contract or through the conclusion of a relevant supplementary agreement, are obliged to maintain secrecy in the same way as the parties themselves through this agreement. The customary exceptions apply (verifiable previous knowledge etc.). Publications by one of the two parties, in which the use and/or provision of SOFTWARE by the respective other party is mentioned in a not insignificant way and named, require prior written approval by this other party.

Art. 7 Written form

Changes to this contract, including changes to this written form clause, subsidiary agreements or amendments and supplements shall be made in writing.

Art. 8 Applicable law and place of jurisdiction

(1) This contract is governed by German law, excluding UN Sales Law.

(2) The place of jurisdiction, including for action against the LICENSOR, is Ansbach. The LICENSOR may alternatively file proceedings at any other legally provided places of jurisdiction.

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- Bouncycastle Bouncycastle License
- Apache Jakarta ORO Apache License, Version 2.0
- Apache Commons Net Apache License, Version 2.0
- Apache Commons Codec Apache License, Version 2.0
- Apache Derby Apache License, Version 2.0
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- NSIS Installer NSIS License

We assume that the various manufacturers or owners of the copyrights to the above-named open source components agree to this procedure as the only practicable solution, as otherwise their main aim of the widest possible distribution of their software could not be achieved to the same extent.

9 SHARKY 775 / SCYLAR INT 8

9.1 Features of SHARKY 775 / SCYLAR INT 8

NOTE

Only the most important information is listed here. All other information concerning installation, communication modules etc. can be obtained from the separate Operating Guide for SHARKY 775 / SCYLAR INT 8.

The SHARKY 775 ultrasonic energy meter and the calculator SCYLAR INT 8 is available in three applications: For heating, for heating with cooling tariff and for cooling.
The IZAR@SET display may vary according to the variant used.

SHARKY 775 / SCYLAR INT 8 is used for measuring thermal energy, flow rate and temperatures and has the option of reporting flow rate deviations (leaks).

SHARKY 775 operates in the temperature range from 5...90/130/150°C, depending on variant and nominal size.

SCYLAR INT 8 operates in the temperature range from 5…180°C, depending on the connected flow sensor.

9.1.1 Calculator

The following figure shows the design of the integrator. More detailed information is available in the separate Operating Guide for SHARKY 775 / SCYLAR INT 8.

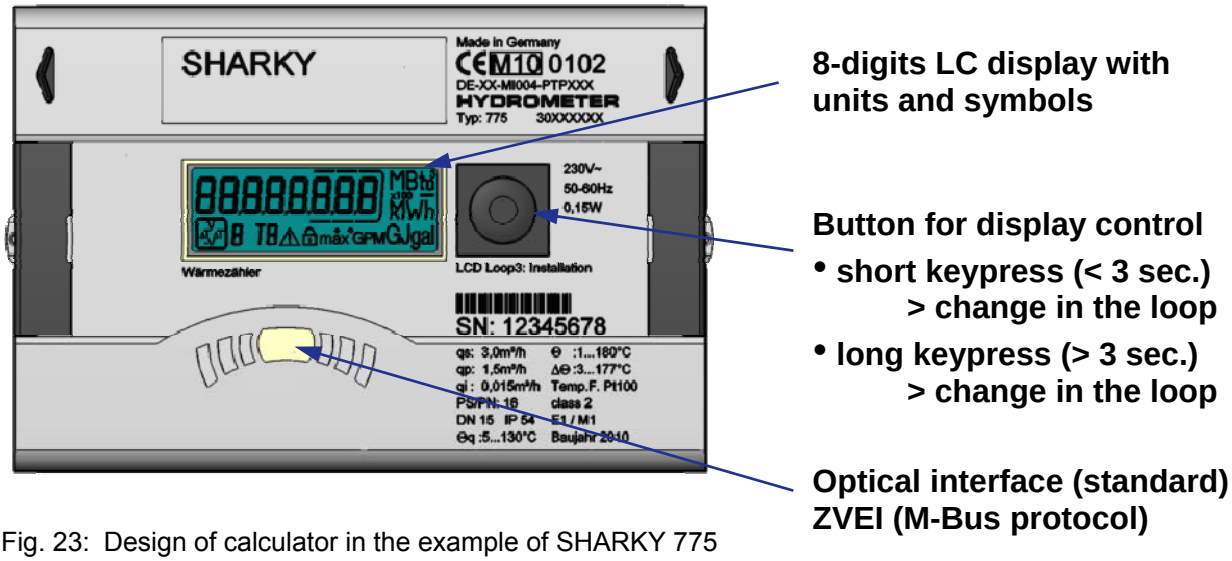


Fig. 23: Design of calculator in the example of SHARKY 775

9.2 Reading and configuring SHARKY / SCYLAR INT 8

9.2.1 Connecting SHARKY / SCYLAR INT 8 to IZAR@SET

Start the software and connect the SHARKY 775 to your PC/laptop (see Section 4 Connecting devices to IZAR@SET).

Click the *Optical devices* button to automatically identify the SHARKY 775 / the SCYLAR INT 8 to be configured.
While the software is scanning for the device and reading the data, a progress bar in the status line shows the status.

NOTE

A running process can be aborted with the red button.

You then pass to the configuration phase. A user interface appears for setting the specific parameters of the SHARKY 775 / SCYLAR INT 8.

9.2.2 Common tab card SHARKY 775

The tab card shows general data for the device.

Device	Values (current meter counts)
• Device name – SHARKY type 775 • q_p m³/h • Medium to be measured – heat • Temperature sensor – Pt500 • Module 1 • Module 2 • Installation location – is entered automatically • Radio • Frequency • Production number – is entered automatically	• Energy kW/h • Volume m³ • Power kW • Flow rate m³/h • Temperature (hot) °C • Temperature (cold) °C • Temperature difference K
Date and time	**Addresses**
• Entered automatically	• Entered automatically
Device status	
• Shows the protection level and current error messages of the SHARKY 775	

The date and time of the device can be changed in Expert mode.

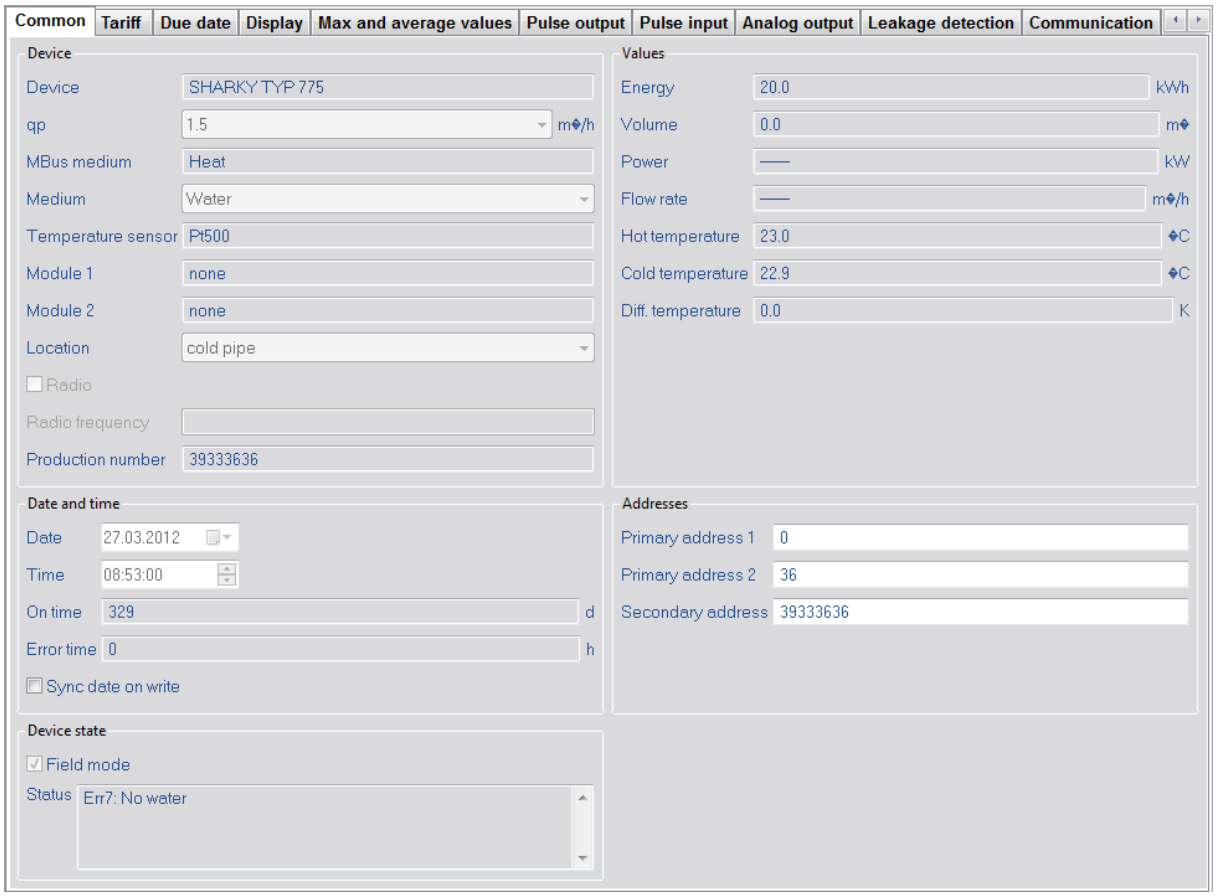


Fig. 24: General tab card

9.2.3 Common tab card SCYLAR INT 8

Device	Values (current meter counts)
• Device name – SCYLAR INT 8 • q_p – factory default • Medium to be measured – heat • Temperature sensor – Pt500 • Module 1 • Module 2 • Installation location – is entered automatically • Radio • Frequency • Production number – is entered automatically	• Energy kW/h • Volume m³ • Power kW • Flow rate m³/h • Temperature (hot) °C • Temperature (cold) °C • Temperature difference K
Date and time	**Addresses**
• Entered automatically	• Entered automatically
Device status	
• Shows the protection level and current error messages of the SHARKY 775	

The date and time of the device can be changed in Expert mode.

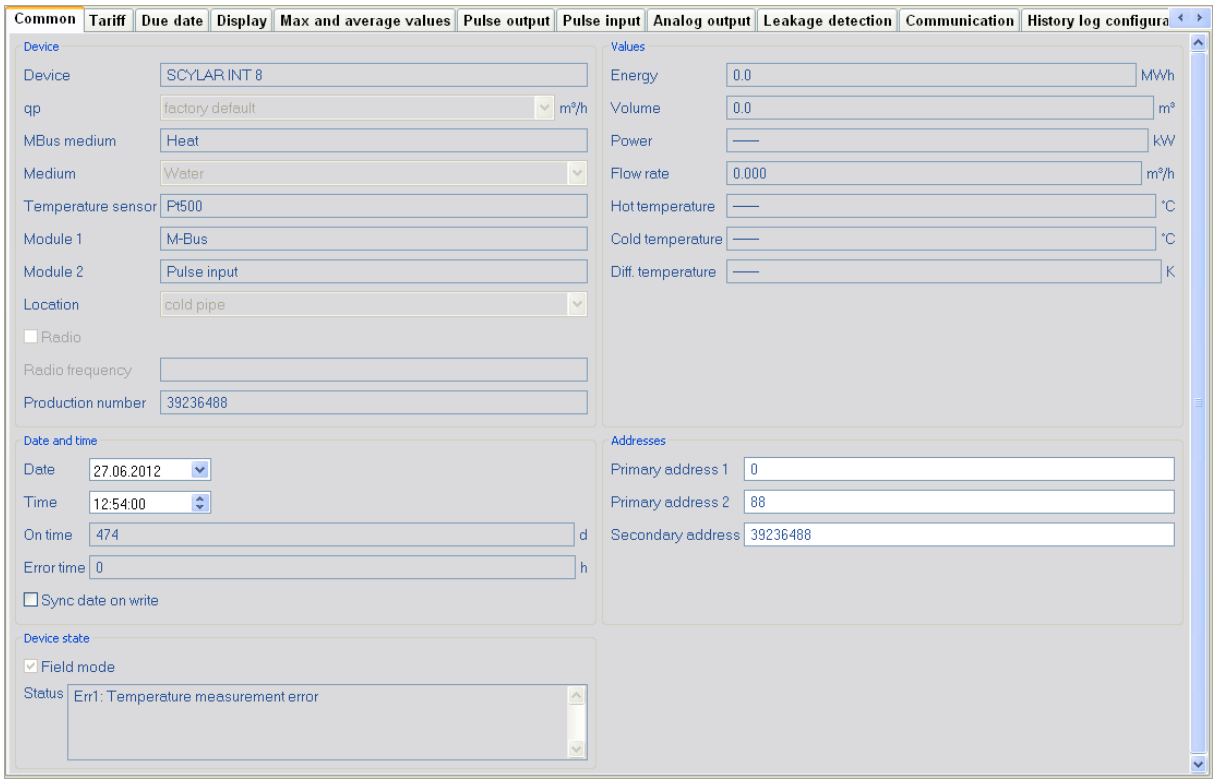


Fig. 25: General tab card

9.2.4 Tariffs tab card SHARKY 775 / SCYLAR INT 8

You can set four different tariff counters in the SHARKY 775 / SCYLAR INT 8.
The tariff registers only accumulate if the tariff condition is fulfilled.
The following table contains the tariff conditions for tariff logs 1 to 4.

You can only set tariff 1 and 2 in Expert mode or Test Lab mode.

Tariff types, value limits and resolutions

Type	Limit	Resolution limit
ΔT	1 .. 255 °C	1 K
Tr,Tf	1 .. 255 °C	1 K
P	1 .. 255 kW	1 kW
Q	0.1 .. 25.5 m³/h	0.1 m³/h
Z		15 minutes

Time-controlled tariff Z (example):

Day	Time
Mon-Fri on	06:00
Mon-Fri off	22:00
Sat-Sun on	06:00
Sat-Sun off	22:00

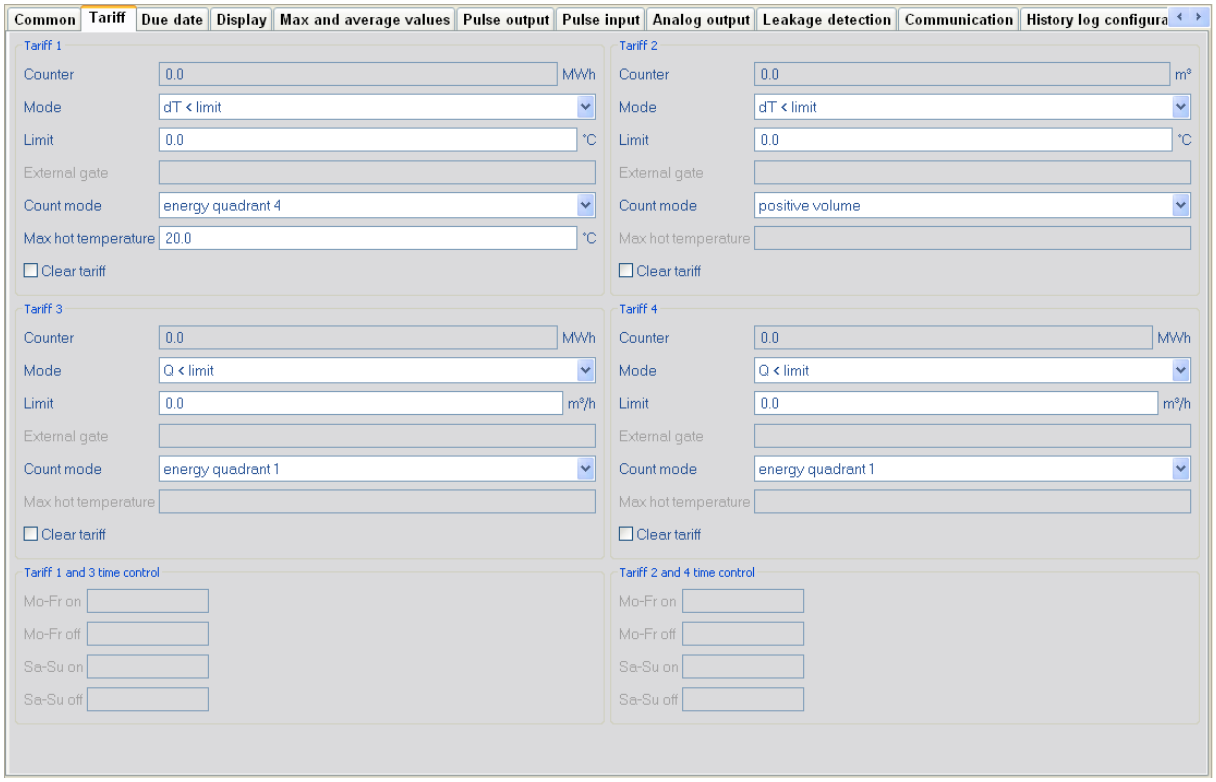


Fig. 26: Tariffs tab card

Energy and volume are the main registers. These registers always count the data as well. The tariff registers are four extra registers, which count depending on the condition being met in the *Mode* field.

In *Count mode* they select which data are to be counted in the tariff register, depending on the mode:

1. Energy
   Distinguishes between counting in quadrant 1 ... 4 or forward or return energy (temperature-independent)
2. Volume
   Distinguishes between forward or return volume
3. Time

You can also select externally controlled as count mode, in which case the accumulation is controlled externally.

The necessary settings are marked in yellow on the tab card, depending on which mode/count mode you select:

Example 1 (heat tariff):
You select count tariff *dT >= limit* as mode. Enter a value for the limit, e.g. 30 °.
Select Energy Quadrant 1 as count mode (quadrant 1 is the heat tariff). Enter the **minimum** temperature (sensor in the hot line) for this heat tariff, e.g. 20 °C. If the forward flow drops below this temperature, the accumulation is stopped.

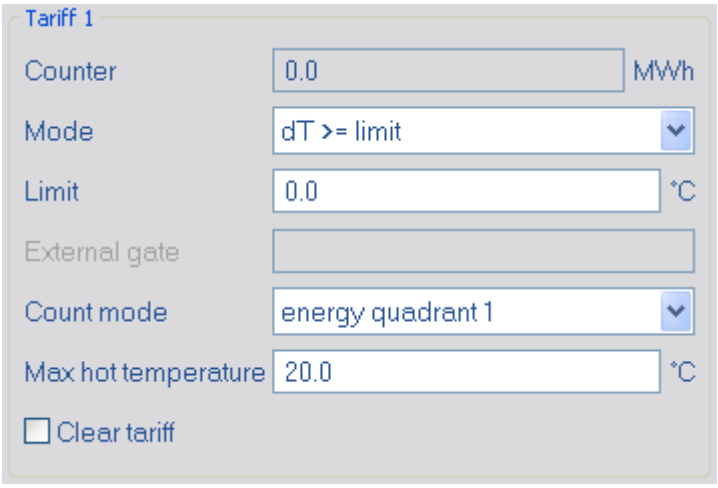


Fig. 27: Example 1: Set data tariff

Example 2 (cooling tariff):
You select count tariff dT <= limit as mode. Enter a number to mark the limit, typically 0K for cooling tariff.
Select Energy Quadrant 4 as count mode (quadrant 4 is the cooling tariff). Enter the **maximum** temperature (sensor in hot line) for this tariff, e.g. 20 °C.
This prevents measurement at the automatically set heat temperature of > 20 °C with the system switched off.

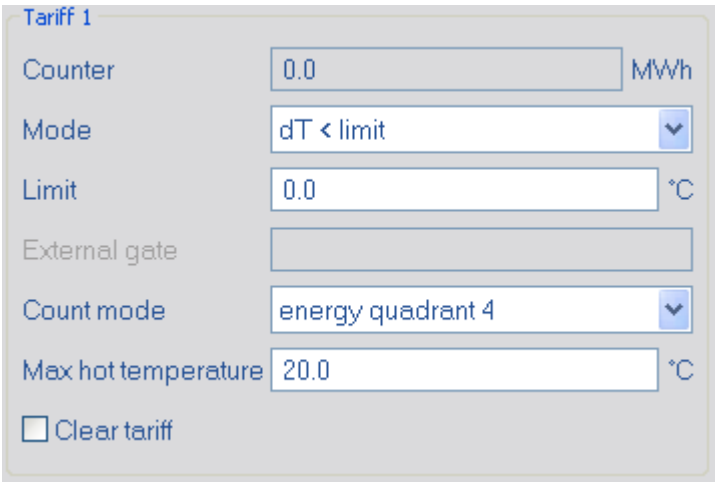


Fig. 28: Example 2: Set data tariff

Example 3:
You select the *time controlled* time tariff as mode. Enter the times in which the data are to be accumulated under Tariff 1 and 3 time-controlled in the bottom section of the display.
Select Energy of the desired quadrant as count mode.

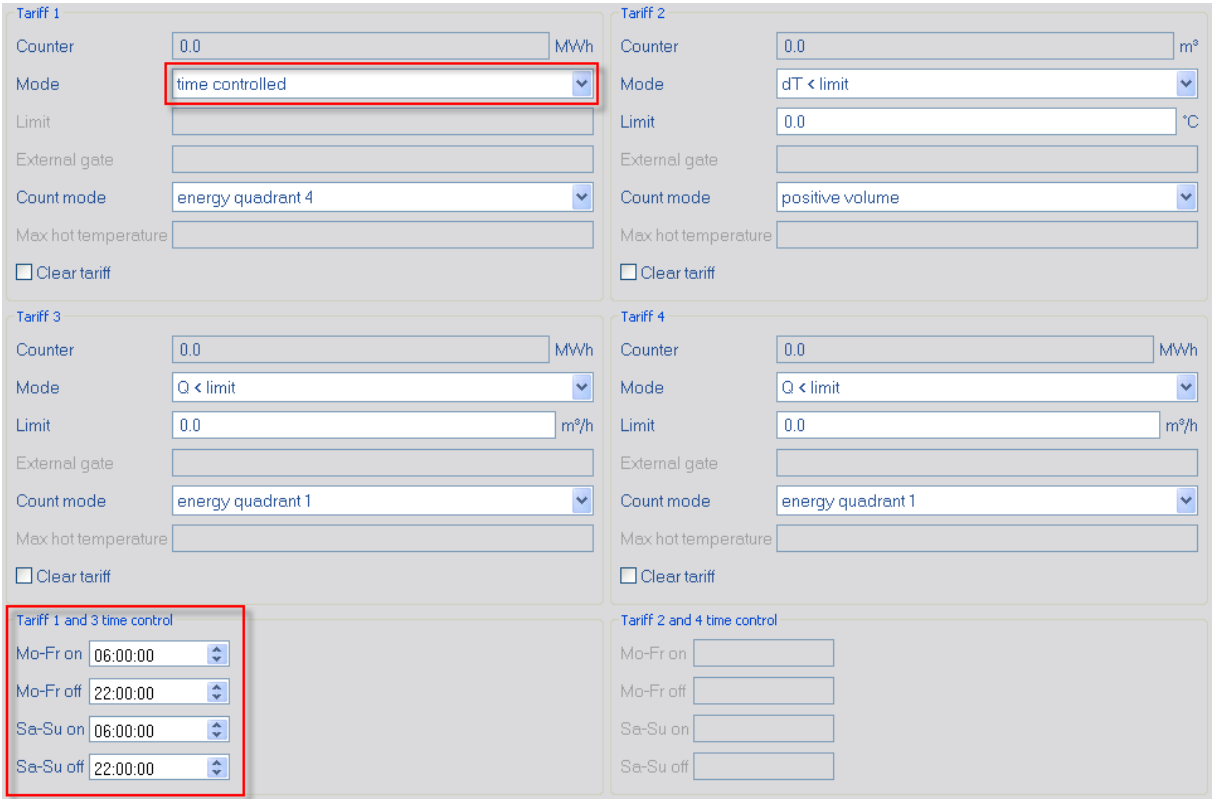


Fig. 29: Example 3: Set time tariff

Example 4:
Select *externally controlled* as mode.
As count mode select the pulse input that is to externally control the data accumulation.

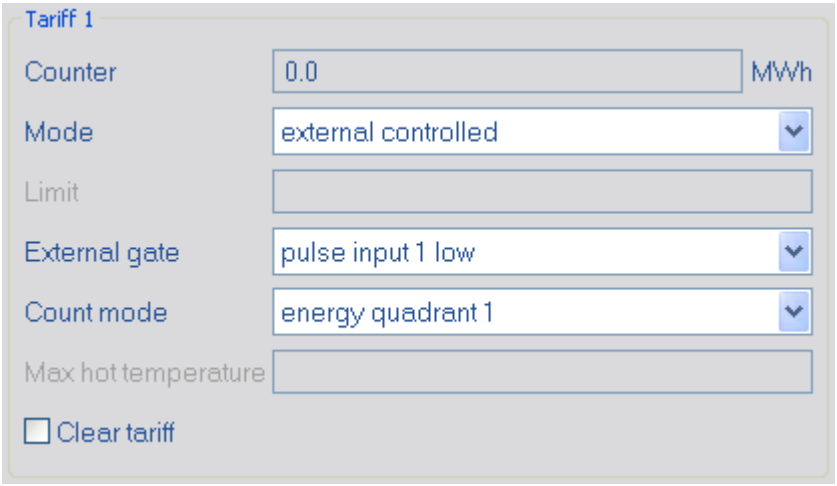


Fig. 30: Example 4: Externally controlled data accumulation

The setting "low" or "high" after the definition of the external port defines the respective input level for active accumulation.

The "Forward Energy" and "Return Energy" count modes work with a real sensor temperature in the hot line, but with a permanently programmed cooling temperature (ex-works setting 0 °C).

9.2.5 Due date tab card SHARKY 775 / SCYLAR INT 8

A set day is a copy of the relevant accumulating register at the set time.
The default settings for the set days are 1.6 and 31.12. The value group *Set Day 1/2 current values* shows you the values of the current set day, the value group *Set Day 1/2 last values* shows you the values of the previous set day.

You can set two different set days. You can choose set days between daily, weekly (stating the weekday), twice monthly, monthly or annually. The current and last set day values are shown for these.

NOTE

The set day values always refer to the beginning of the day, i.e. to 0:00:00 on the day indicated.
This also makes a set day of 29.2 possible.

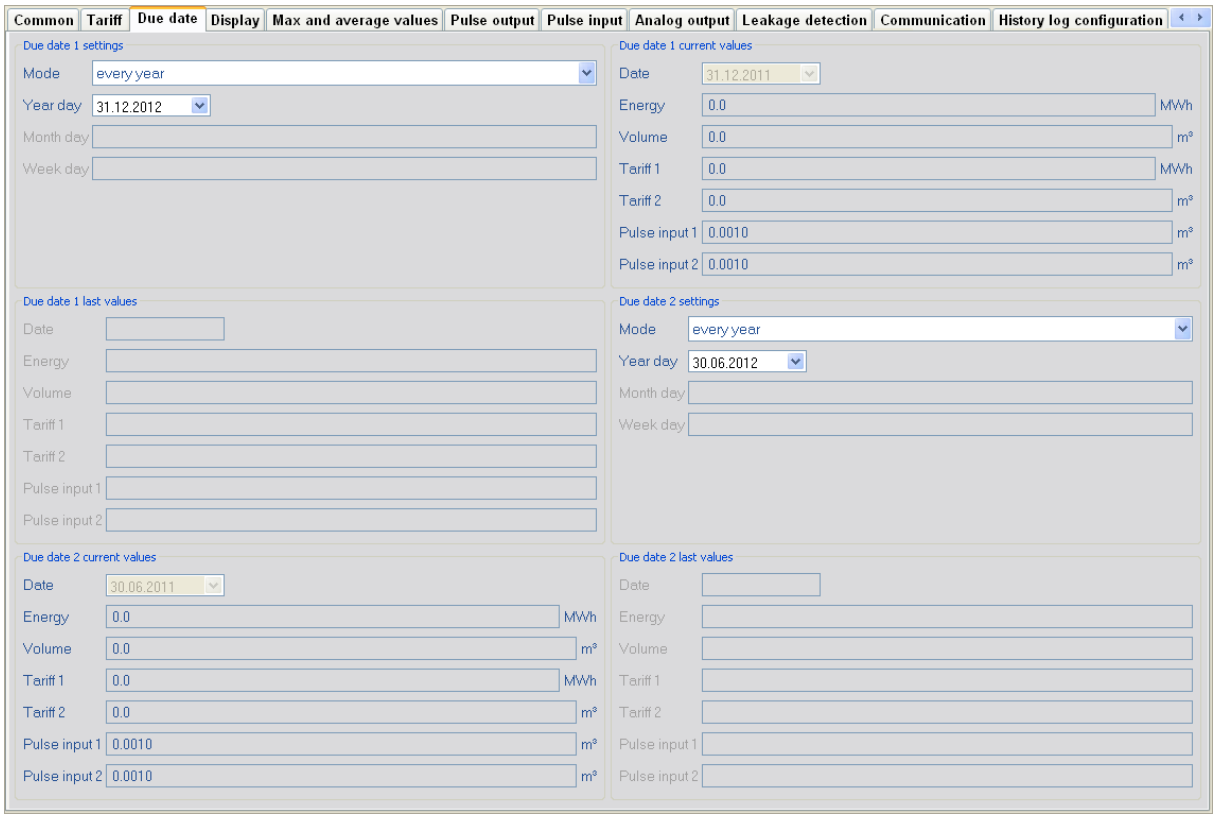


Fig. 31: Set Days tab card

9.2.6 Display tab card SHARKY 775

The SHARKY 775 is supplied ex works with a basic loop structure as default setting.

You can change the loops in Expert mode.

You can define up to six different loops for the device display. A list of all the fields available is displayed for each loop, from which you can select the desired fields.

Loop 1 and loop 3 can not be disabled or enabled, they are enabled at the factory. You can change loop 1 up to loop 5 in the order of appearance in each loop and add or remove values. The appearance of loop 6 cannot be changed.

The following conditions apply:
The total number of selectable fields for all loops is limited to 60 fields. If more data are selected, they are not accepted for the respective loop.

NOTE

Loop 1 cannot be deactivated.

The verified register must always be in the first position.

The following fields must be defined in a desired loop of the display. These fields cannot be removed from a loop until they have been added to another loop.

- Installation position
- Error status
- Display test
- Software version : OUT4 (optical test pulses)

NOTE

The desired fields are activated or deactivated and the number of entries specified in loop 6 (monthly log). Free configuration of loop 6 is not possible; here are predefined information selectable.

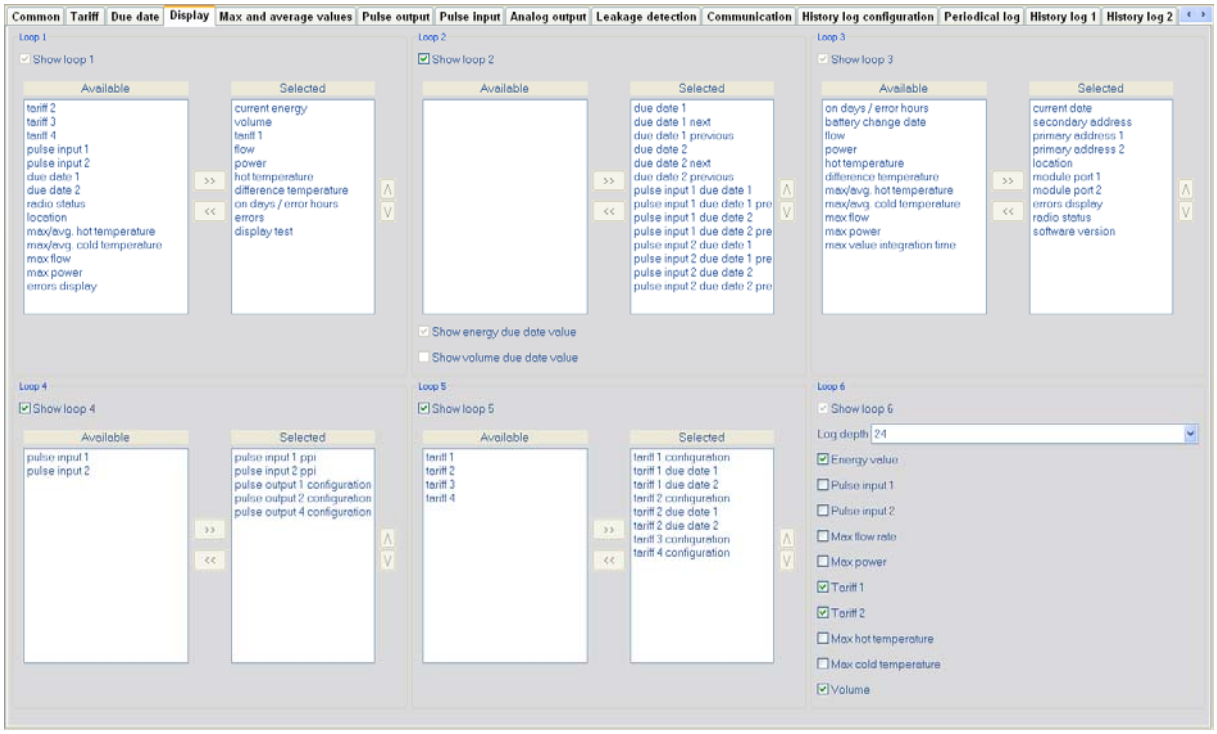


Fig. 32: Display tab card

9.2.7 Display tab card SCYLAR INT 8

The SCYLAR INT 8 is supplied ex works with a basic loop structure as default setting.

You can change the loops in Expert mode.

You can define up to six different loops for the device display. A list of all the fields available is displayed for each loop, from which you can select the desired fields.

Loop 1 and loop 3 can not be disabled or enabled, they are enabled at the factory. You can change loop 1 up to loop 5 in the order of appearance in each loop and add or remove values. The appearance of loop 6 cannot be changed.

The following conditions apply:
The total number of selectable fields for all loops is limited to 60 fields. If more data are selected, they are not accepted for the respective loop.

NOTE

Loop 1 cannot be deactivated.

The verified register must always be in the first position.

The following fields must be defined in a desired loop of the display. These fields cannot be removed from a loop until they have been added to another loop.

- Installation position
- Error status
- Display test
- Software version : OUT4 (optical test pulses)

NOTE

The desired fields are activated or deactivated and the number of entries specified in loop 6 (monthly log). Free configuration of loop 6 is not possible; here are predefined information selectable.

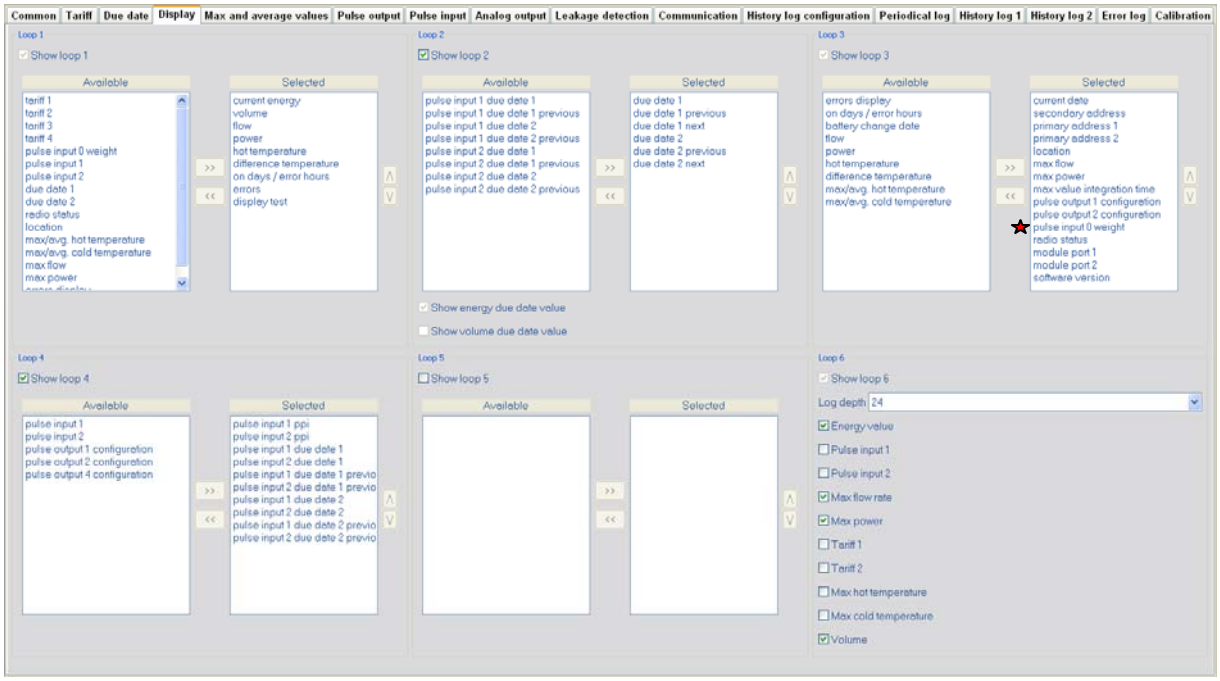


Fig. 33: Display tab card

★pulse input 0 weight is a functional feature of the SCYLAR INT 8.

9.2.8 Maximum and Average Values tab card SHARKY 775 / SCYLAR INT 8

This tab card comprises 5 sections (i.e. 5 registers) and is directly related to the settings in the “History Log Configuration” tab card.

NOTE

The integration interval for determining maximum values must always be smaller than the mode of the periodic log. For example, it is NOT possible to set both to daily!

EITHER maximum values OR mean values are always stated.

The five registers show maximum values with their date and time. To prevent short-term peaks being received as maximum values, the integration interval serves as a mean time to dampen such short-term peak values. This means the highest mean values are stored in the maximum values.

These maximum and mean values are stored in the periodic log and optionally in the log. The cyclic storage interval of the periodic log therefore also represents the time period for determining the maximum values.

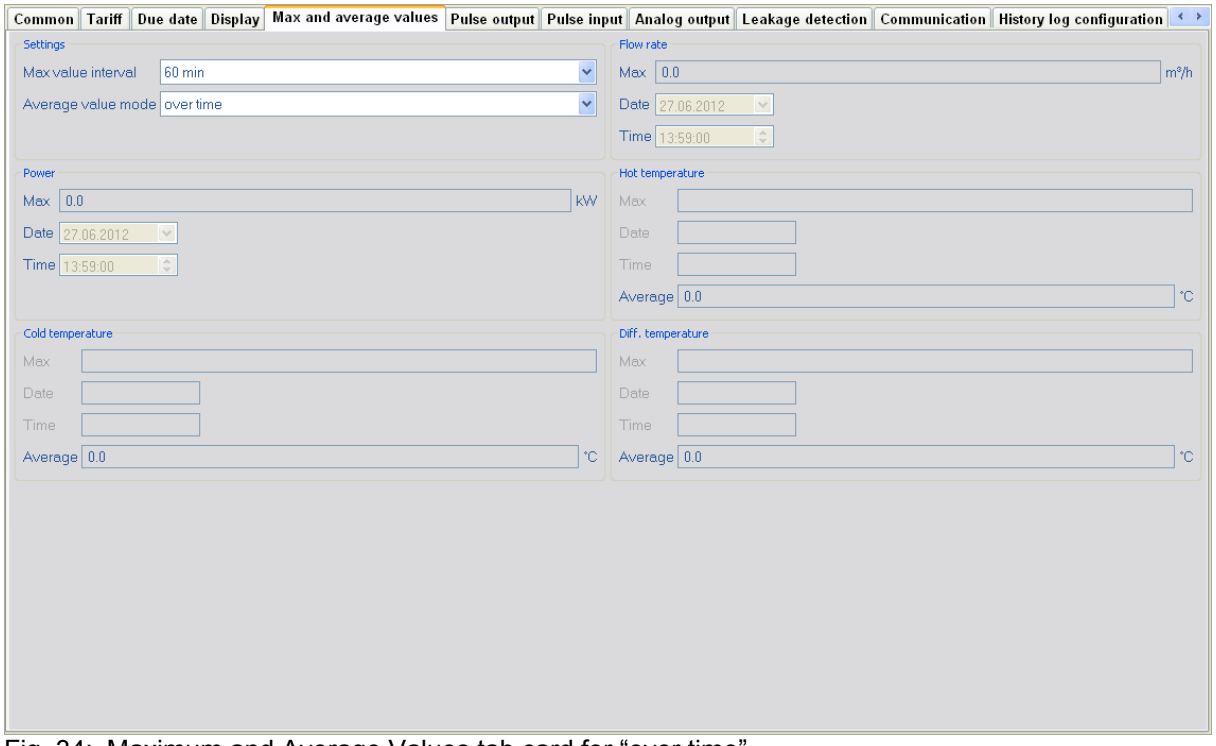


Fig. 34: Maximum and Average Values tab card for “over time”

For the temperatures, a maximum value with time stamp and the “last” mean value of the integration interval are shown.

The maximum values are only valid if you select *over time* as mode. Maximum values are still shown for flow rate and power for all the other settings, but mean values are now determined continuously for the temperatures.

The recorded values are stored in the logs (periodic log and history logs)

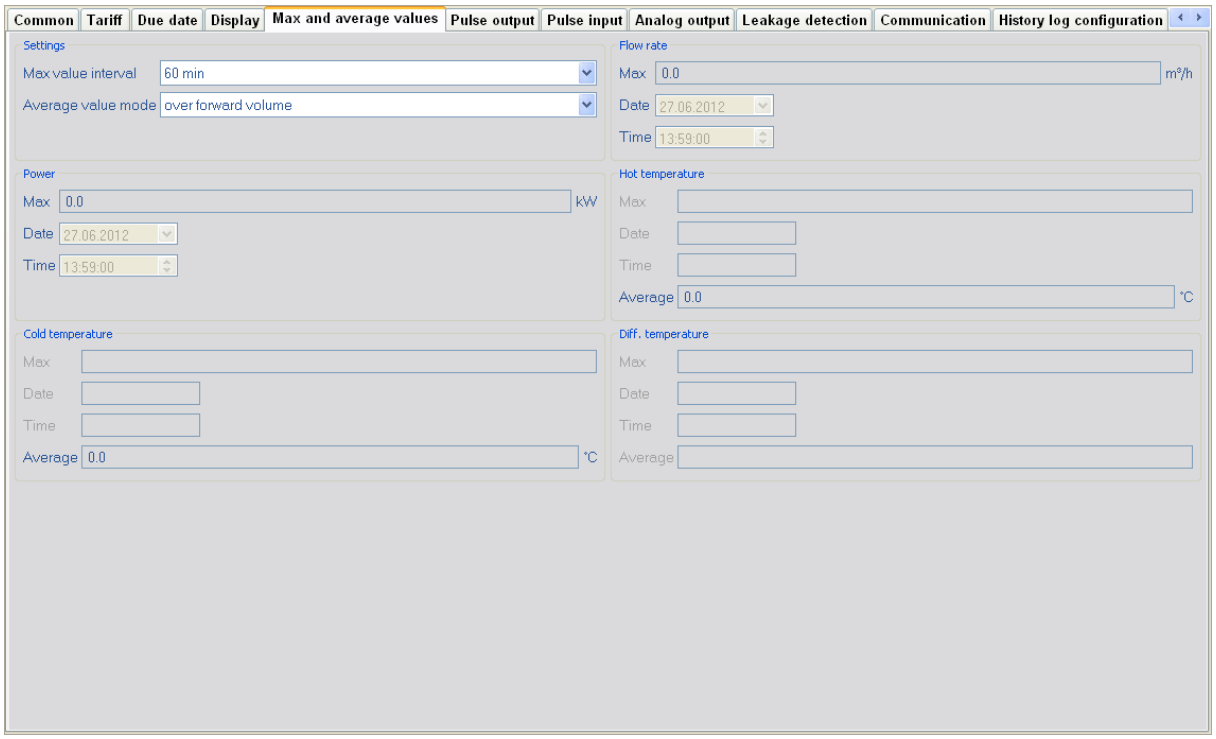


Fig. 35: Maximum and Mean Values tab card for “over forward volume”

Here you can change the integration interval for the maximum values and the mode for calculating the mean values in Expert mode.

Integration interval:

- 6, 15, 30, 60 minutes
- 24 hours
- 1024 seconds

Over time:
For this type of determination, the maximum values and the date and time of their occurrence are shown for all registers.

Forward, return and total volume:
The maximum values for flow rate and power are created only for the forward direction, and mean values for hot and cold temperature sensors.

9.2.9 Pulse Output tab card SHARKY 775 / SCYLAR INT 8

You can define two pulse outputs.

The energy pulse output is marked as standard as “01 - ⊥” on the module and “Out1” in the display. The volume output is marked as “02 - ⊥” on the module and “Out2” in the display.

See the separate Operating Guide for SHARKY 775 / SCYLAR INT 8 for information on how to install these outputs in SHARKY 775 / SCYLAR INT 8.

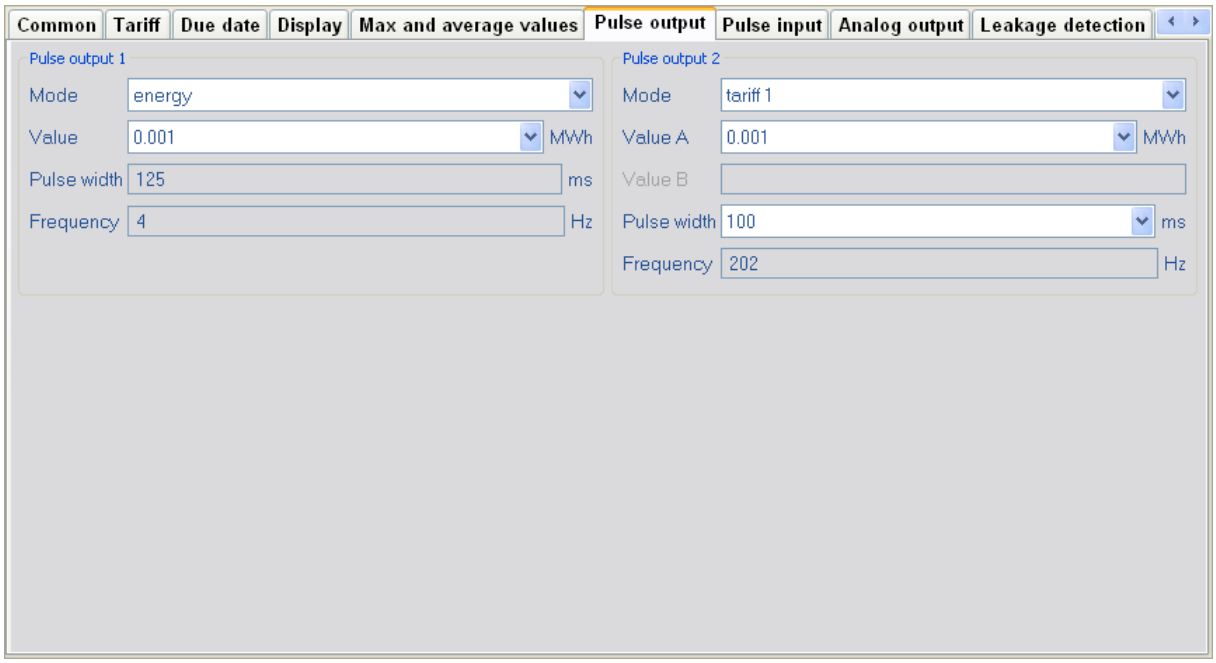


Fig. 36: Pulse Output tab card

Pulse output 1 has a fixed pulse width and frequency.
The pulse width of pulse output 2 can be varied, which results in a maximum pulse frequency.

9.2.10 Pulse Input tab card SHARKY 775

The module has 2 pulse inputs for connecting 2 additional pulse meters, such as water meters, gas meters or electricity meters.

Please refer to the Operating Guide for the device for information about the adjustable value in litres per pulse (l/P).
All the units available in the device are also available for you here.

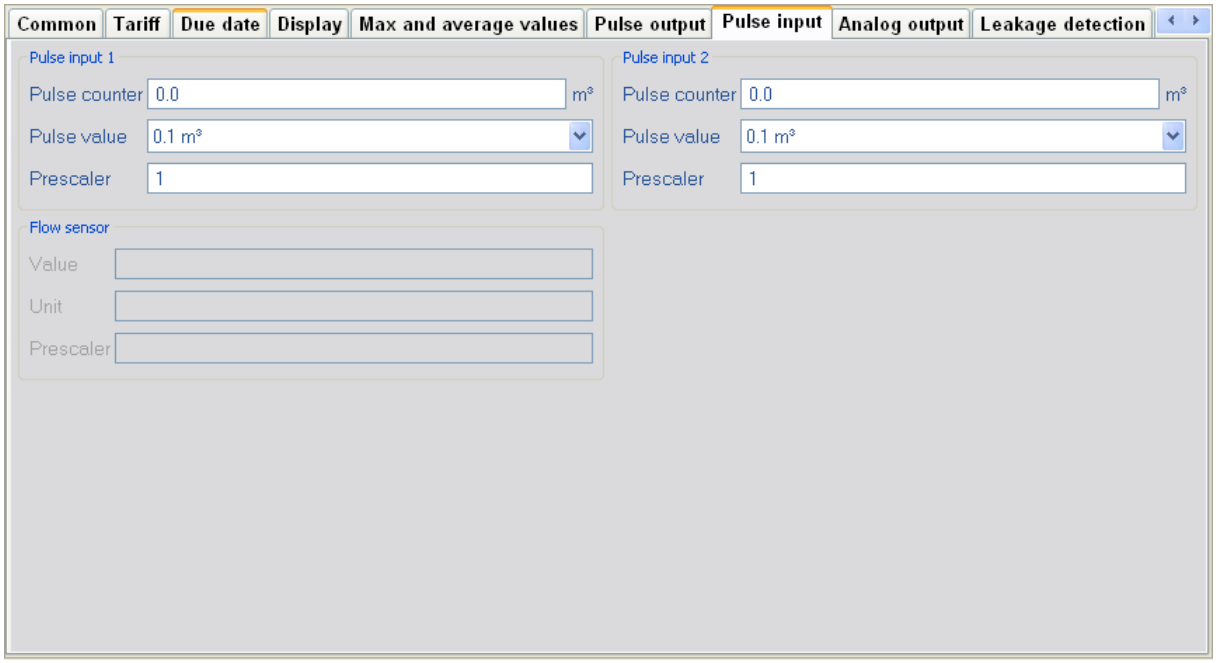


Fig. 37: Pulse Input tab card

The prescaler here acts as a “pre-counter”. For example, if this is set to 5, the SHARKY 775 only counts every fifth pulse. This also makes it possible to set non-decadic units.

Example:
Volume meter has a pulse value of 2.5 litres/pulse:
Pulse meter 1 m³
Pulse value: 0.01 m³ ->0.01 m³ / 4=2.5 litres/pulse
Prescaler: 4

9.2.11 Pulse Input tab card SCYLAR INT 8

The module has 2 pulse inputs for connecting 2 additional pulse meters, such as water meters, gas meters or electricity meters.

Please refer to the Operating Guide for the device for information about the adjustable value in litres per pulse (l/P).
All the units available in the device are also available for you here.

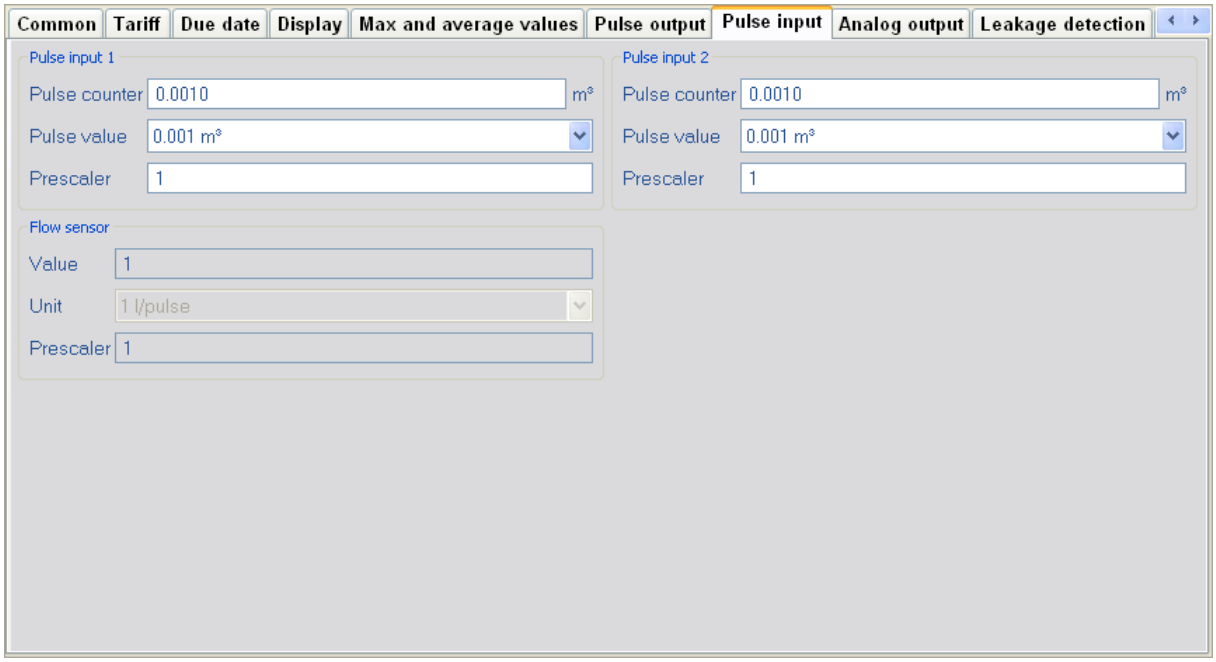


Fig. 38: Pulse Input tab card

The prescaler here acts as a “pre-counter”. For example, if this is set to 5, the SCYLAR INT 8 only counts every fifth pulse. This also makes it possible to set non-decadic units.

Example:
Volume meter has a pulse value of 2.5 litres/pulse:
Pulse meter 1 m³
Pulse value: 0.01 m³ ->0.01 m³ / 4=2.5 litres/pulse
Prescaler: 4

The pulse output value of the connected flow sensor is displayed in “Flow sensor”.

9.2.12 Analogue Output tab card SHARKY 775 / SCYLAR INT 8

The analogue module is the same size as 2 standard modules, has 2 passive outputs and a current loop of 4 to 20 mA. Errors are generated with 3.5 mA or 22.6 mA (programmable).

You can select flow rate, power or temperatures as output values.

The passive analogue output is free configurable with all permission levels.

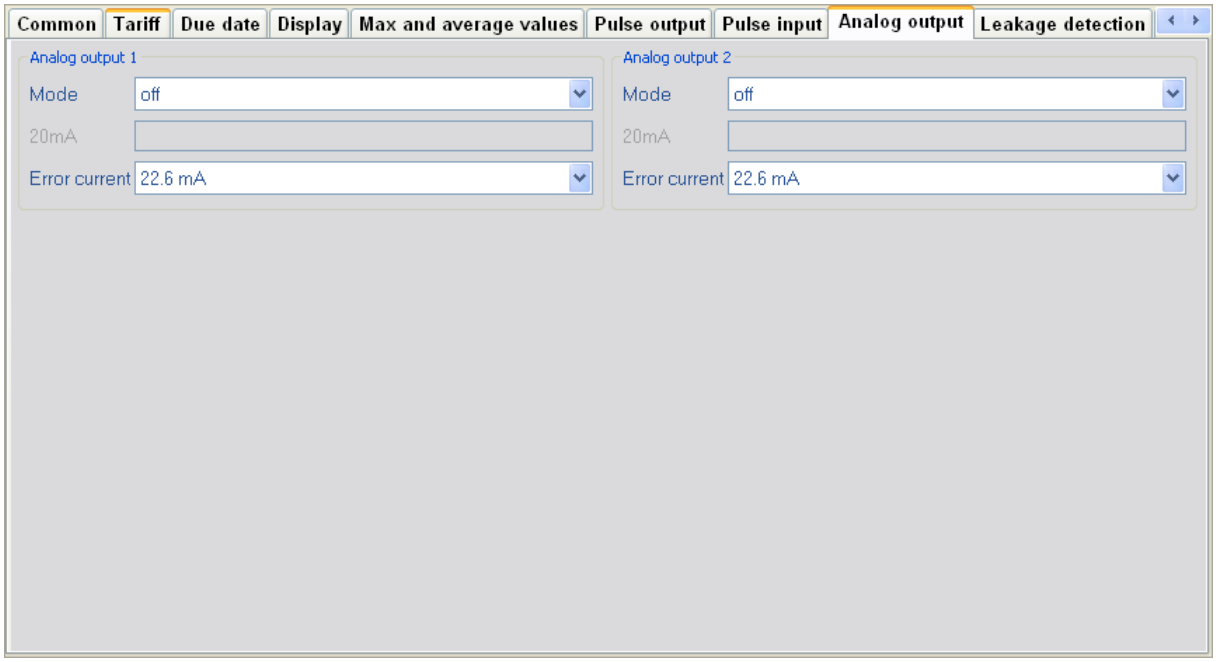


Fig. 39: Analogue Output tab card

The output values are limited to:
Flow rate: max. flow rate (dependent on nominal size)
Power: max. power (dependent on nominal size)
Absolute temperature: 125 °C
Temperature difference: 125 K

9.2.13 Leakage Detection tab card SHARKY 775 / SCYLAR INT 8

Clicking this tab card activates leakage detection and sets the parameters.
This requires an additional volume meter in the other line (depending on meter version).
Please refer to the SHARKY 775 / SCYLAR INT 8 Operating Guide for details.

Water data group:
You can use pulse inputs In1 and In2 for hot water and cold water consumption.
The maximum time is the time in which the device does not expect any consumption, for example at night.

You can enter the desired time period here in Expert mode; possible settings are 1 minute to 4 hours.

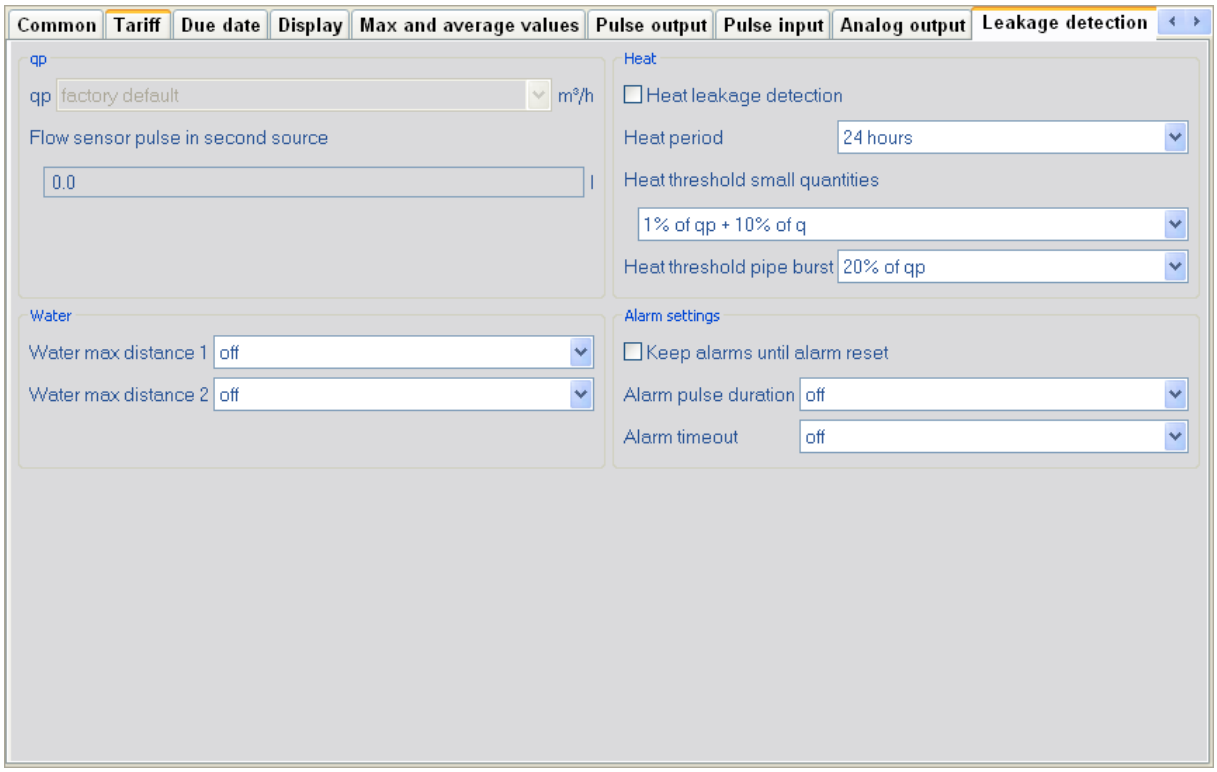


Fig. 40: Leakage Detection tab card

Water data group:
These settings refer to SHARKY 775 / SCYLAR INT 8 itself.
This function distinguishes between detection of a “gradual” leak and a burst pipe.

An interval and a recording parameter must be defined for detection of a gradual leak. The meter determines a possible loss in the interval time based on the current flow rate and nominal size.

The burst pipe detection is a reaction to large differences between the forward and return flow rate. This immediately generates an alarm.

Alarm setting data group:
The alarm output is also retained when the leakage as such is no longer detected or detectable. The reaction to this situation can be configured.

NOTE

The alarm output is provided by the pulse out module. A suitable setting is necessary for the output.

9.2.14 Communication tab card SHARKY 775 / SCYLAR INT 8

SHARKY 775 / SCYLAR INT 8 supports two communication channels over the same or different interfaces. An additional communication module can be used in radio operation.

The protocol is different for each of the two channels and can be programmed to suit customer-specific requirements. Each channel has its own primary address. The specific parameters for the device-internal radio are set as well as the protocols.

NOTE

The definition for telegram 2 is also the radio protocol.

Telegram content:
The available registers are shown, from which you select the required registers for the telegram for each communication channel. The order of the registers can also be set as desired.

Telegram length:
The length of the telegrams is calculated and shown. A maximum length of 150 bytes is possible for use as a radio telegram. A telegram length of up to 250 bytes is possible for MBUS communication. The length of the radio telegram also affects the transmit interval. A duty cycle of 0.1 % is specified for this by legislation. The transmit interval can be intentionally increased, however, in order to avoid collisions in radio traffic. This can range from 8 s to 254 s.

Here you can activate the radio communication for internal radio. The *Standby* parameter indicates that the device is in the ex works state.
This means the meter activates radio automatically if it is filled with water for at least 2 min. If the meter is then filled with water for 3 hours without interruption, radio remains activated permanently. If the water is interrupted within the 3 hours, the meter returns to *Standby*.
The radio protocol corresponds to the Hydrometer standard or the Open Metering standard and is encrypted. A transmission frequency of 868 MHz or 434 MHz is shown.

In Test Lab mode, test centres can choose between *Real Data* and *Open Metering* as radio protocol.

NOTE

The radio protocol can only be changed to Open Metering if the *Keep Password* function in the *User Preferences > Security* menu is NOT selected, so that the correct extension can be written for the radio key.

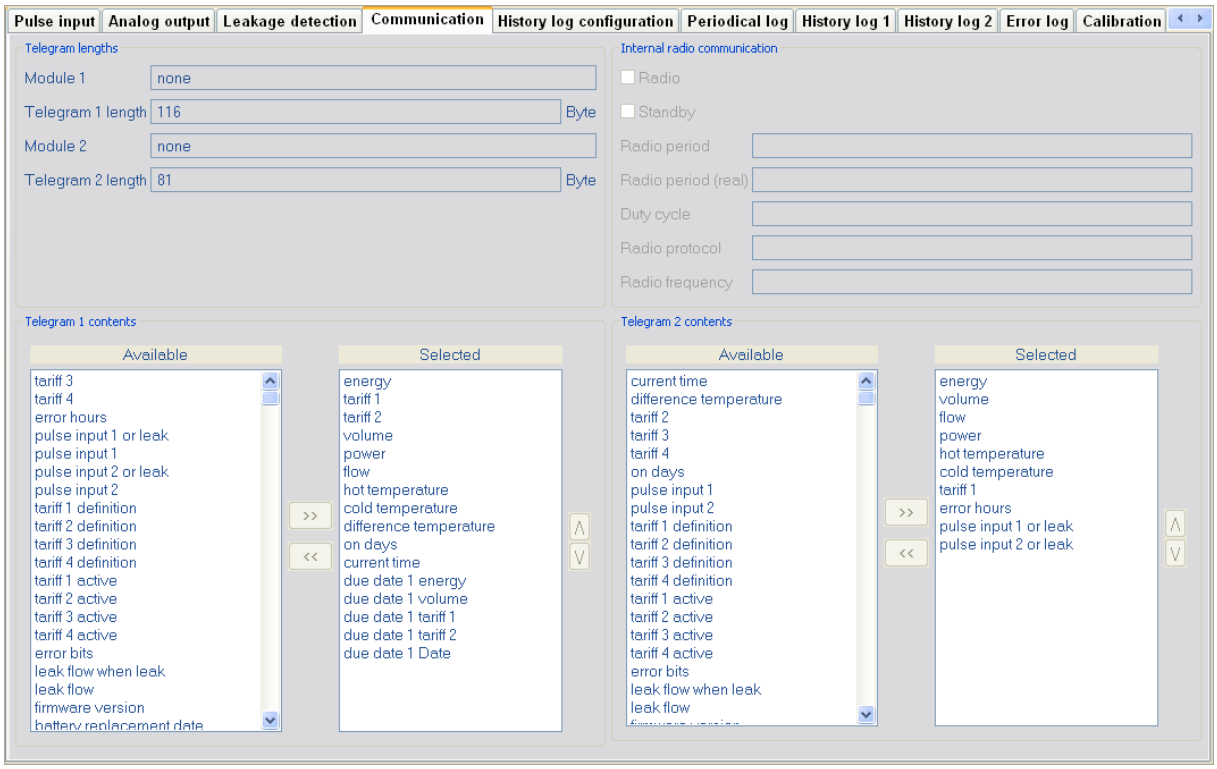


Fig. 41: Communication tab card

9.2.15 History Log Configuration tab card SHARKY 775 / SCYLAR INT 8

This tab card contains three independent logs:

- Periodic log (with a number of fixed values)
- History log 1
- History log 2

9.2.15.1 Periodical log

This memory block has the range of values shown below.
This value block can be stored 24x times and is a rolling memory (FiFo).

- Date / time
- Energy
- Tariff energy 1
- Tariff energy 2
- Volume
- Pulse input meter 1
- Pulse input meter 2
- Tariff definition 1
- Tariff definition 2
- Pulse input definition 1
- Pulse input definition 2
- Error hours counter
- Max. flow rate
- Max. flow rate time
- Max. flow rate date
- Max. power
- Max. power time
- Max. power date
- Operating days
- Max. forward temperature
- Max. forward temperature time
- Max. forward temperature date
- Max. return temperature
- Max. return temperature time
- Max. return temperature date

The storage speed is set with the mode.

- daily
- weekly – stating day of week
- twice monthly – stating days of month
- annually on set day 1
- annually on set day 2

9.2.15.2 History log

Here you define the storage mode for the two history logs:

- every x minutes – stating number of minutes
- every x hours – stating number of hours
- daily
- weekly – stating day of week
- twice monthly – stating days of month
- annually on set day 1
- annually on set day 2

You select the values to be stored in history logs 1 and 2 separately from a list for each log.

In Expert mode you can change the date and time and the addresses of the device. You can also set the storage mode for the periodic log:

- daily
- weekly – stating day of week
- twice monthly: on the 15th and last day of the month
- monthly – stating day of month
- annually on set day 1
- annually on set day 2

ATTENTION

If you change the settings for the history logs and write these changes to the device, the current log will be cleared and the data previously collected lost.
First read out and save the data using the command *EXPORT HISTORY LOG 1/HISTORY LOG 2*.

ATTENTION

The max. values interval that stores first resets the max. and mean values. This means the following max. values with longer intervals only have values available from the fastest interval. These values can therefore be wrong. Max. values are stored in the periodic log and optionally in the history log too.

NOTE

The integration interval for determining maximum values must always be smaller than the mode of the periodic log. It is NOT possible to set both to daily!

To obtain useful data in a short period of time, for example for checking the meter settings, use history log 1. To observe long-term consumption parallel to this, use history log 2.
First divide the log memory resources. Select the ratio for dividing the memory space in the Resource Assignment data group.

- 100 % log 1 – 0 % log 2
- 90 % log 1 –10 % log 2
- 75 % log 1 – 25 % log 2
- 50 % log 1 – 50 % log 2
- 25 % log 1 – 75 % log 2
- 10 % log 1 – 90 % log 2
- 0 % log 1 – 100 % log 2

NOTE

The shorter the mode, the more the data volume and the more memory space required.

You can choose the values to be stored in history log 1 and 2 from a selection list.

ATTENTION

The max. values interval that stores first resets the max. values. This means the following max. values with longer intervals only have values available from the fastest interval. These values can therefore be wrong. Max. values are stored in the periodic log and optionally in the history log too.

The *Number of entries* field shows you how many entries you can achieve with the current settings. The more entries possible, the larger the depth of the history log; i.e. the further you can trace back the data. Process your selection of values until you reach a suitable number of entries for your purpose, then write the settings to your device.

ATTENTION

The log memories have only a limited space available. If this space is full, the oldest entry is overwritten by the newest entry (FiFo).

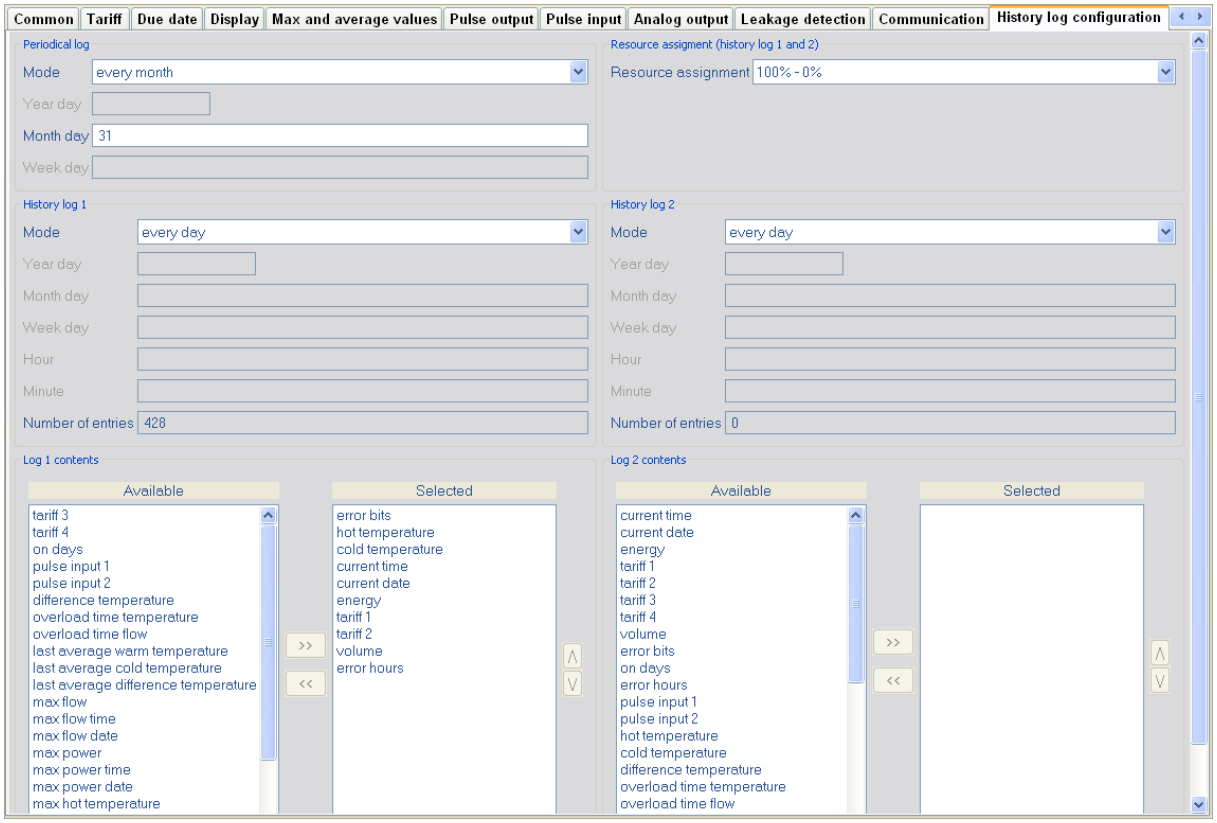


Fig. 42: History Log Configuration tab card

9.2.16 Periodical Log tab card SHARKY 775 / SCYLAR INT 8

You access the data using the menu *Commands* > *Read Periodical Log*. A data table appears as shown in Fig. 43.

The following maximum 23 values are repeatedly stored in this log (for 2 years).

- Date / time
- Energy
- Tariff energy 1
- Tariff energy 2
- Volume
- Pulse input meter 1
- Pulse input meter 2
- Tariff definition 1
- Tariff definition 2
- Pulse input definition 1
- Pulse input definition 2
- Error hours counter
- Max. flow rate
- Max. flow rate time
- Max. flow rate date
- Max. power
- Max. power time
- Max. power date
- Operating days
- Max. forward temperature
- Max. forward temperature time
- Max. forward temperature date
- Max. return temperature
- Max. return temperature time
- Max. return temperature date

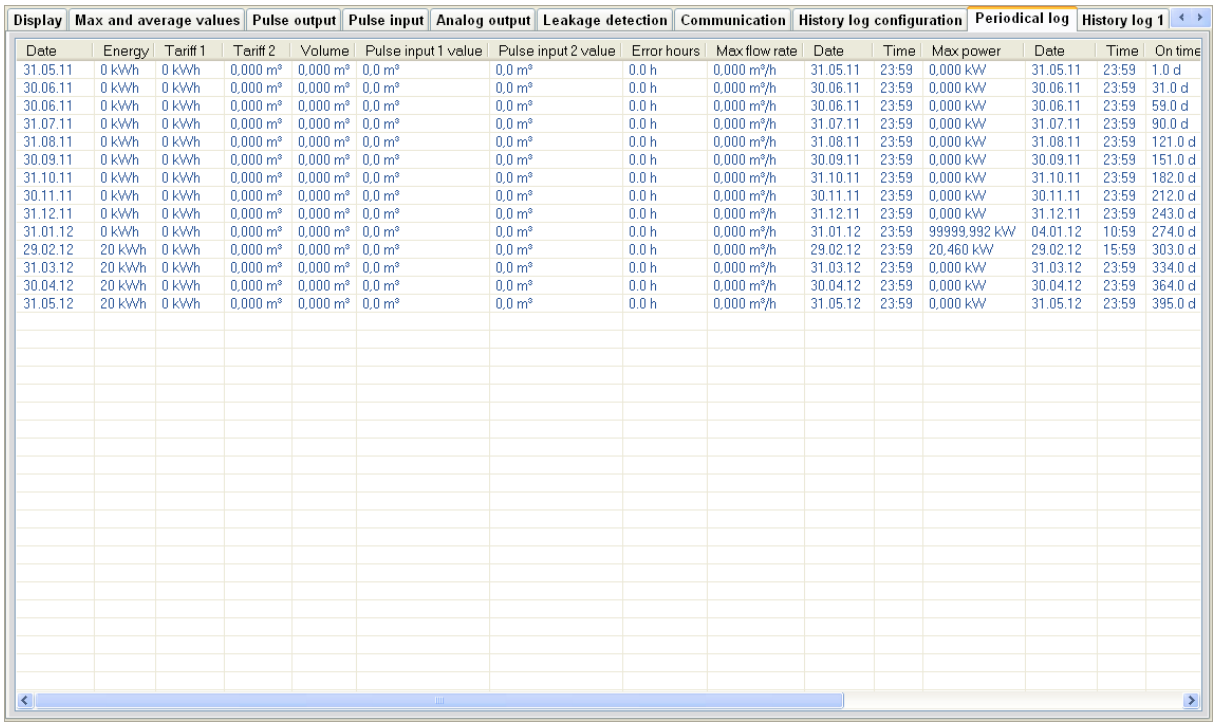
This memory space is also limited.

ATTENTION

The log memories have only a limited space available. If this space is full, the oldest entry is overwritten by the newest entry (FiFo).

You can export this table as a csv file and then process it in MS Office Excel. Click *Export Periodical Log* in the *Commands* menu. The csv file is stored in the "Data" folder of the program directory IZAR_SET/IZAR (see also Section 5.2 Menu bar).

Example:



Display | Max and average values | Pulse output | Pulse input | Analog output | Leakage detection | Communication | History log configuration | Periodical log | History log 1

Date	Energy	Tariff 1	Tariff 2	Volume	Pulse input 1 value	Pulse input 2 value	Error hours	Max flow rate	Date	Time	Max power	Date	Time	On time
31.05.11	0 kWh	0 kWh	0,000 m³	0,000 m³	0,0 m³	0,0 m³	0.0 h	0,000 m³/h	31.05.11	23:59	0,000 kW	31.05.11	23:59	1.0 d
30.06.11	0 kWh	0 kWh	0,000 m³	0,000 m³	0,0 m³	0,0 m³	0.0 h	0,000 m³/h	30.06.11	23:59	0,000 kW	30.06.11	23:59	31.0 d
30.06.11	0 kWh	0 kWh	0,000 m³	0,000 m³	0,0 m³	0,0 m³	0.0 h	0,000 m³/h	30.06.11	23:59	0,000 kW	30.06.11	23:59	59.0 d
31.07.11	0 kWh	0 kWh	0,000 m³	0,000 m³	0,0 m³	0,0 m³	0.0 h	0,000 m³/h	31.07.11	23:59	0,000 kW	31.07.11	23:59	90.0 d
31.08.11	0 kWh	0 kWh	0,000 m³	0,000 m³	0,0 m³	0,0 m³	0.0 h	0,000 m³/h	31.08.11	23:59	0,000 kW	31.08.11	23:59	121.0 d
30.09.11	0 kWh	0 kWh	0,000 m³	0,000 m³	0,0 m³	0,0 m³	0.0 h	0,000 m³/h	30.09.11	23:59	0,000 kW	30.09.11	23:59	151.0 d
31.10.11	0 kWh	0 kWh	0,000 m³	0,000 m³	0,0 m³	0,0 m³	0.0 h	0,000 m³/h	31.10.11	23:59	0,000 kW	31.10.11	23:59	182.0 d
30.11.11	0 kWh	0 kWh	0,000 m³	0,000 m³	0,0 m³	0,0 m³	0.0 h	0,000 m³/h	30.11.11	23:59	0,000 kW	30.11.11	23:59	212.0 d
31.12.11	0 kWh	0 kWh	0,000 m³	0,000 m³	0,0 m³	0,0 m³	0.0 h	0,000 m³/h	31.12.11	23:59	0,000 kW	31.12.11	23:59	243.0 d
31.01.12	0 kWh	0 kWh	0,000 m³	0,000 m³	0,0 m³	0,0 m³	0.0 h	0,000 m³/h	31.01.12	23:59	99999,992 kW	04.01.12	10:59	274.0 d
29.02.12	20 kWh	0 kWh	0,000 m³	0,000 m³	0,0 m³	0,0 m³	0.0 h	0,000 m³/h	29.02.12	23:59	20,460 kW	29.02.12	15:59	303.0 d
31.03.12	20 kWh	0 kWh	0,000 m³	0,000 m³	0,0 m³	0,0 m³	0.0 h	0,000 m³/h	31.03.12	23:59	0,000 kW	31.03.12	23:59	334.0 d
30.04.12	20 kWh	0 kWh	0,000 m³	0,000 m³	0,0 m³	0,0 m³	0.0 h	0,000 m³/h	30.04.12	23:59	0,000 kW	30.04.12	23:59	364.0 d
31.05.12	20 kWh	0 kWh	0,000 m³	0,000 m³	0,0 m³	0,0 m³	0.0 h	0,000 m³/h	31.05.12	23:59	0,000 kW	31.05.12	23:59	395.0 d

Fig. 43: Periodic Log tab card

9.2.17 History Log 1 and 2 tab card SHARKY 775 / SCYLAR INT 8

You access the data using the menu *Commands* > *Read History Log 1 (or History Log 2)*. A data table appears as shown in Fig. 41.

This log stores the maximum values selected by you.

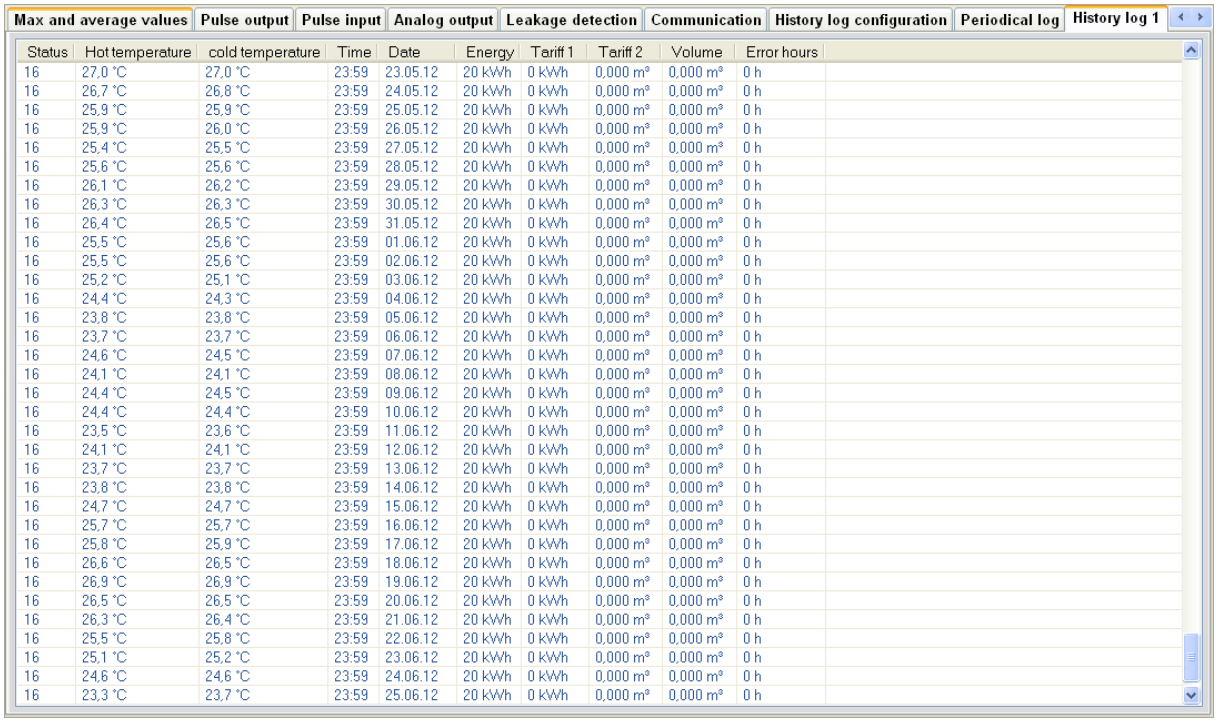
This memory space is also limited.

ATTENTION

The log memories have only a limited space available. If this space is full, the oldest entry is overwritten by the newest entry (FiFo).

You can export this table as a csv file and then process it in MS Office Excel. Click *Export History Log 1 (or 2)* in the *Commands* menu. The csv file is stored in the "Data" folder of the program directory IZAR_SET/IZAR (see also Section 5.2 Menu bar).

Example:



Max and average values | Pulse output | Pulse input | Analog output | Leakage detection | Communication | History log configuration | Periodical log | History log 1

Status	Hot temperature	cold temperature	Time	Date	Energy	Tariff 1	Tariff 2	Volume	Error hours
16	27,0 °C	27,0 °C	23:59	23.05.12	20 kWh	0 kWh	0,000 m³	0,000 m³	0 h
16	26,7 °C	26,8 °C	23:59	24.05.12	20 kWh	0 kWh	0,000 m³	0,000 m³	0 h
16	25,9 °C	25,9 °C	23:59	25.05.12	20 kWh	0 kWh	0,000 m³	0,000 m³	0 h
16	25,9 °C	26,0 °C	23:59	26.05.12	20 kWh	0 kWh	0,000 m³	0,000 m³	0 h
16	25,4 °C	25,5 °C	23:59	27.05.12	20 kWh	0 kWh	0,000 m³	0,000 m³	0 h
16	25,6 °C	25,6 °C	23:59	28.05.12	20 kWh	0 kWh	0,000 m³	0,000 m³	0 h
16	26,1 °C	26,2 °C	23:59	29.05.12	20 kWh	0 kWh	0,000 m³	0,000 m³	0 h
16	26,3 °C	26,3 °C	23:59	30.05.12	20 kWh	0 kWh	0,000 m³	0,000 m³	0 h
16	26,4 °C	26,5 °C	23:59	31.05.12	20 kWh	0 kWh	0,000 m³	0,000 m³	0 h
16	25,5 °C	25,6 °C	23:59	01.06.12	20 kWh	0 kWh	0,000 m³	0,000 m³	0 h
16	25,5 °C	25,6 °C	23:59	02.06.12	20 kWh	0 kWh	0,000 m³	0,000 m³	0 h
16	25,2 °C	25,1 °C	23:59	03.06.12	20 kWh	0 kWh	0,000 m³	0,000 m³	0 h
16	24,4 °C	24,3 °C	23:59	04.06.12	20 kWh	0 kWh	0,000 m³	0,000 m³	0 h
16	23,8 °C	23,8 °C	23:59	05.06.12	20 kWh	0 kWh	0,000 m³	0,000 m³	0 h
16	23,7 °C	23,7 °C	23:59	06.06.12	20 kWh	0 kWh	0,000 m³	0,000 m³	0 h
16	24,6 °C	24,5 °C	23:59	07.06.12	20 kWh	0 kWh	0,000 m³	0,000 m³	0 h
16	24,1 °C	24,1 °C	23:59	08.06.12	20 kWh	0 kWh	0,000 m³	0,000 m³	0 h
16	24,4 °C	24,5 °C	23:59	09.06.12	20 kWh	0 kWh	0,000 m³	0,000 m³	0 h
16	24,4 °C	24,4 °C	23:59	10.06.12	20 kWh	0 kWh	0,000 m³	0,000 m³	0 h
16	23,5 °C	23,6 °C	23:59	11.06.12	20 kWh	0 kWh	0,000 m³	0,000 m³	0 h
16	24,1 °C	24,1 °C	23:59	12.06.12	20 kWh	0 kWh	0,000 m³	0,000 m³	0 h
16	23,7 °C	23,7 °C	23:59	13.06.12	20 kWh	0 kWh	0,000 m³	0,000 m³	0 h
16	23,8 °C	23,8 °C	23:59	14.06.12	20 kWh	0 kWh	0,000 m³	0,000 m³	0 h
16	24,7 °C	24,7 °C	23:59	15.06.12	20 kWh	0 kWh	0,000 m³	0,000 m³	0 h
16	25,7 °C	25,7 °C	23:59	16.06.12	20 kWh	0 kWh	0,000 m³	0,000 m³	0 h
16	25,8 °C	25,9 °C	23:59	17.06.12	20 kWh	0 kWh	0,000 m³	0,000 m³	0 h
16	26,6 °C	26,5 °C	23:59	18.06.12	20 kWh	0 kWh	0,000 m³	0,000 m³	0 h
16	26,9 °C	26,9 °C	23:59	19.06.12	20 kWh	0 kWh	0,000 m³	0,000 m³	0 h
16	26,5 °C	26,5 °C	23:59	20.06.12	20 kWh	0 kWh	0,000 m³	0,000 m³	0 h
16	26,3 °C	26,4 °C	23:59	21.06.12	20 kWh	0 kWh	0,000 m³	0,000 m³	0 h
16	25,5 °C	25,8 °C	23:59	22.06.12	20 kWh	0 kWh	0,000 m³	0,000 m³	0 h
16	25,1 °C	25,2 °C	23:59	23.06.12	20 kWh	0 kWh	0,000 m³	0,000 m³	0 h
16	24,6 °C	24,6 °C	23:59	24.06.12	20 kWh	0 kWh	0,000 m³	0,000 m³	0 h
16	23,3 °C	23,7 °C	23:59	25.06.12	20 kWh	0 kWh	0,000 m³	0,000 m³	0 h

Fig. 44: History Log 1 tab card

9.2.18 Error Log tab card SHARKY 775

Access the data using the menu *Commands* > *Read Error Log*. A data table appears as shown in (Fig. 46, page 70).

This list shows all the errors that have occurred. The date and time are also shown.
The occurrence of an error is indicated by 0 or 1. 0 = error not occurred and 1 = error occurred. All errors are stored, even if several errors occur at the same time (as in the table shown).

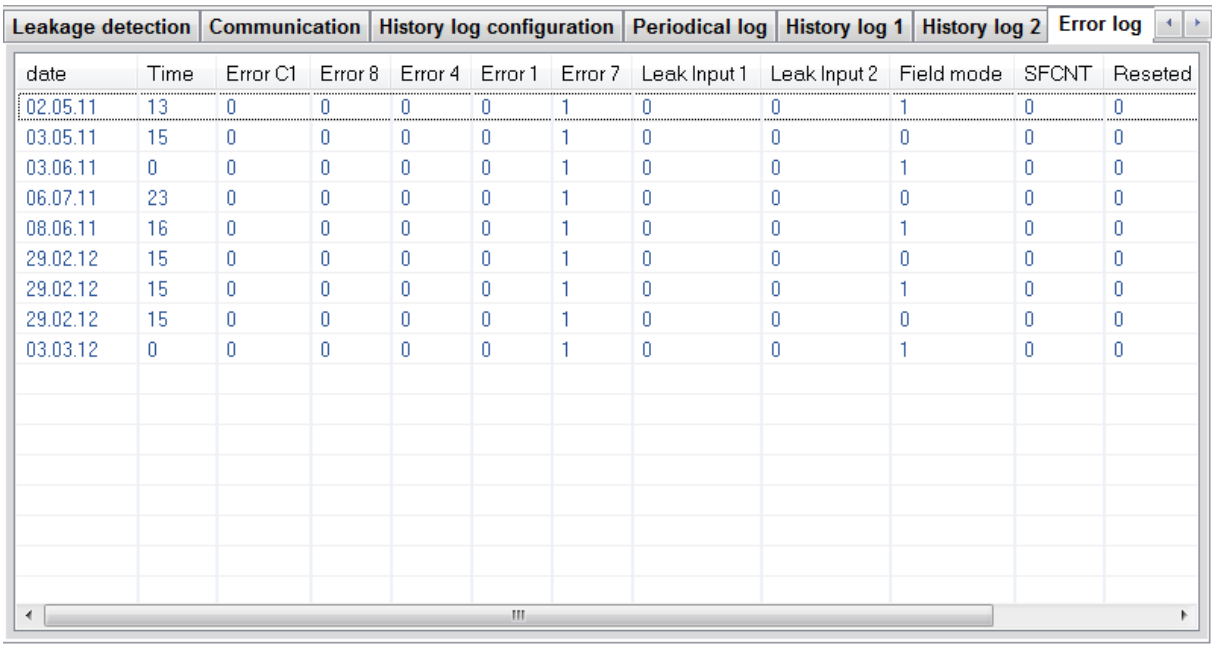
NOTE

An error is not stored and indicated until it has been registered for longer than 6 minutes without interruption.

You can export the error log table as a csv file and then process it in MS Office Excel. Click *Export Error Log* in the *Commands* menu. The csv file is stored in the "Data" folder of the program directory IZAR_SET/IZAR (see also Section 5.2 Menu bar).

Error display	Error description
C - 1	Basic parameter error in flash or RAM
E 1	Temperature range exceeds [-9.9 °C...190 °C] > Sensor short-circuit, sensor break
E 3	Forward and return sensor reversed
E 4	Hardware error US measurement > Transducer defective or short-circuit
E 5	Communication not possible (too frequent reading)
E 6	Wrong direction of flow in volume measuring component > Flow rate = 0
E 7	No meaningful ultrasonic receive signal > Air in the measuring path
E 8	Defective primary voltage (only if mains unit used) Supply from backup battery
E 9	Battery almost flat
E A	Leakage: burst pipe detected
E b	Leakage: heat meter leak detected
E C	Leakage: leakage pulse input 1
E d	Leakage: leakage pulse input 2

Fig. 45: SHARKY 775 error codes



date	Time	Error C1	Error 8	Error 4	Error 1	Error 7	Leak Input 1	Leak Input 2	Field mode	SFCNT	Reseted
02.05.11	13	0	0	0	0	1	0	0	1	0	0
03.05.11	15	0	0	0	0	1	0	0	0	0	0
03.06.11	0	0	0	0	0	1	0	0	1	0	0
06.07.11	23	0	0	0	0	1	0	0	0	0	0
08.06.11	16	0	0	0	0	1	0	0	1	0	0
29.02.12	15	0	0	0	0	1	0	0	0	0	0
29.02.12	15	0	0	0	0	1	0	0	1	0	0
29.02.12	15	0	0	0	0	1	0	0	0	0	0
03.03.12	0	0	0	0	0	1	0	0	1	0	0

Fig. 46: Error Log tab card

9.2.19 Error Log tab card SCYLAR INT 8

Access the data using the menu *Commands* > *Read Error Log*. A data table appears as shown in (Fig. 48, page 72).

This list shows all the errors that have occurred. The date and time are also shown. The occurrence of an error is indicated by 0 or 1. 0 = error not occurred and 1 = error occurred. All errors are stored, even if several errors occur at the same time (as in the table shown).

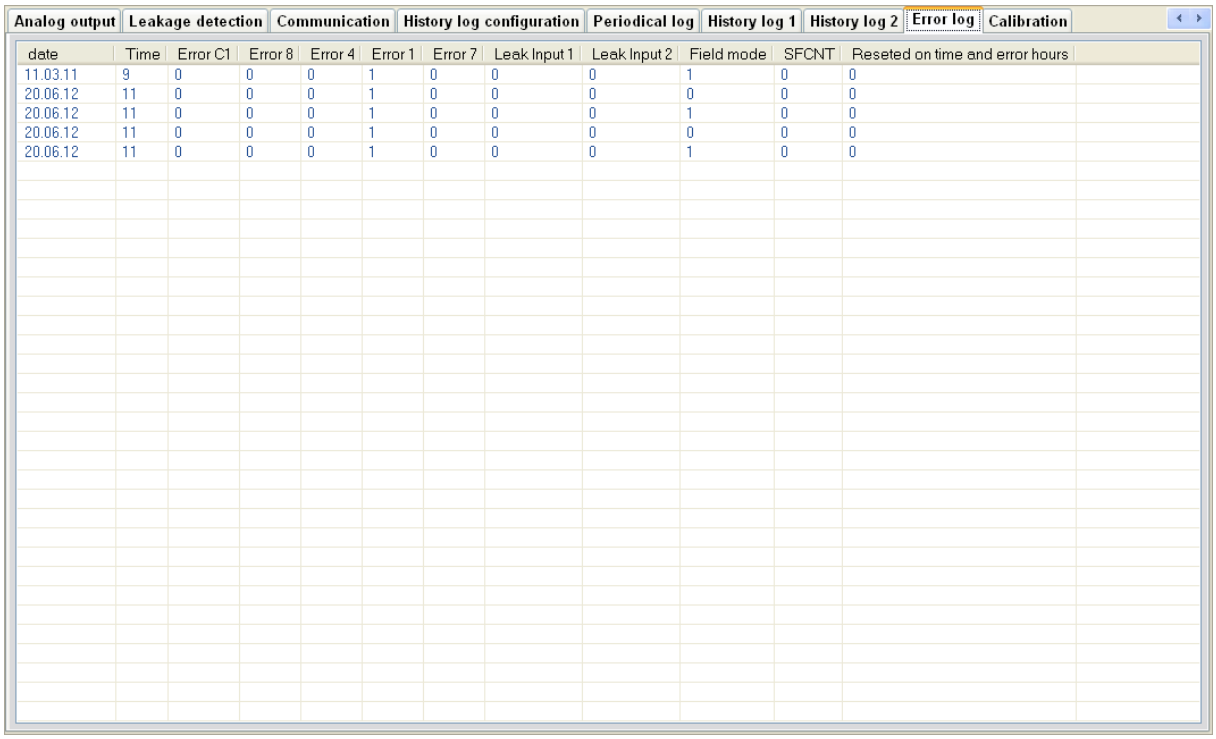
NOTE

An error is not stored and indicated until it has been registered for longer than 6 minutes without interruption.

You can export the error log table as a csv file and then process it in MS Office Excel. Click *Export Error Log* in the *Commands* menu. The csv file is stored in the "Data" folder of the program directory IZAR_SET/IZAR (see also Section 5.2 Menu bar).

Error display	Error description
C - 1	Basic parameter error in flash or RAM
E 1	Temperature range exceeds [-9.9 °C...190 °C] > Sensor short-circuit, sensor break
E 3	Forward and return sensor reversed
E 5	Communication not possible (too frequent reading)
E 8	Defective primary voltage (only if mains unit used) Supply from backup battery
E 9	Battery almost flat
E A	Leakage: burst pipe detected
E b	Leakage: heat meter leak detected
E C	Leakage: leakage pulse input 1
E d	Leakage: leakage pulse input 2

Fig. 47: SCYLAR INT 8 error codes



date	Time	Error C1	Error 8	Error 4	Error 1	Error 7	Leak Input 1	Leak Input 2	Field mode	SFCNT	Reseted on time and error hours
11.03.11	9	0	0	0	1	0	0	0	1	0	0
20.06.12	11	0	0	0	1	0	0	0	0	0	0
20.06.12	11	0	0	0	1	0	0	0	1	0	0
20.06.12	11	0	0	0	1	0	0	0	0	0	0
20.06.12	11	0	0	0	1	0	0	0	1	0	0

Fig. 48: Error Log tab card

9.2.20 Calibration tab card SHARKY 775

The relevant data for test centres are shown here. The values for energy, volume, flow rate, power and temperatures are also shown.

These values can only be changed by test centres.

Select the battery here that is to supply power for the SHARKY 775. The replacement data is calculated automatically and shown. You can choose between:

- A-cell (3.6 VDC, 11 years lifetime, incl. radio at reading rate of 120 s)
- D-cell (3.6 VDC, 16 years lifetime, incl. radio at reading rate of 12 s)

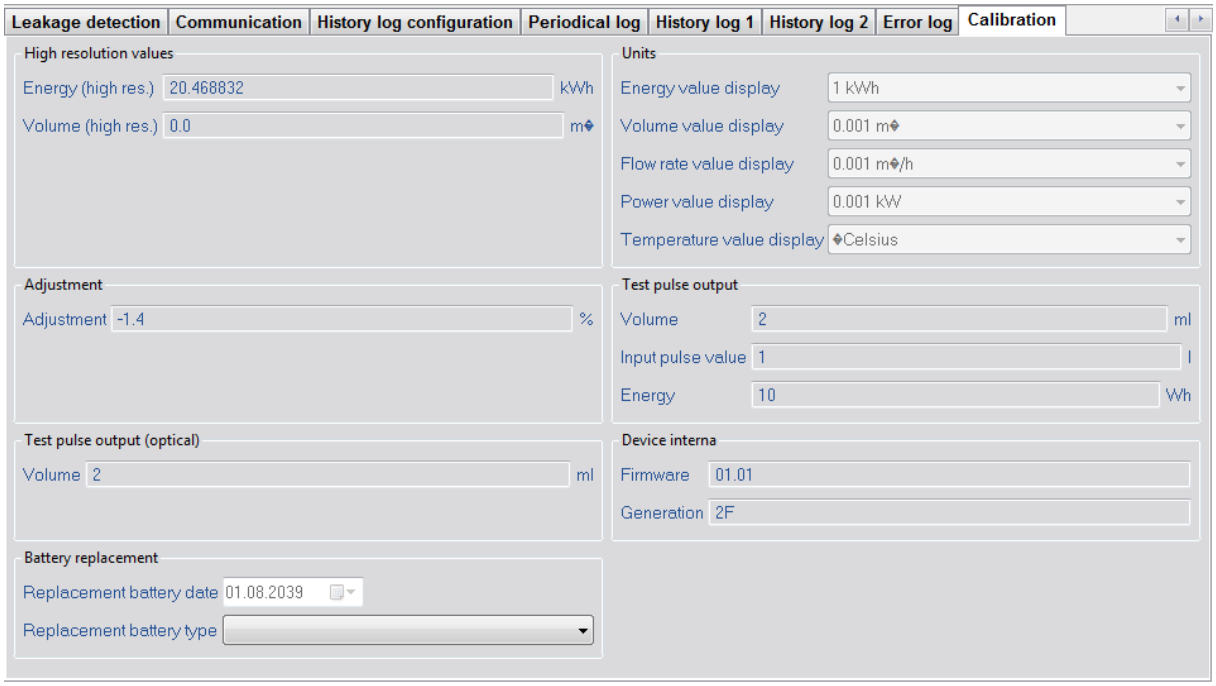


Fig. 49: Calibration tab card

9.2.21 Calibration tab card SCYLAR INT 8

The relevant data for test centres are shown here. The values for energy, volume, flow rate, power and temperatures are also shown.

These values can only be changed by test centres.

Select the battery here that is to supply power for the SCYLAR INT 8. The replacement data is calculated automatically and shown. You can choose between:

- A-cell (3.6 VDC, 11 years lifetime, incl. radio at reading rate of 120 s)
- D-cell (3.6 VDC, 16 years lifetime, incl. radio at reading rate of 12 s)

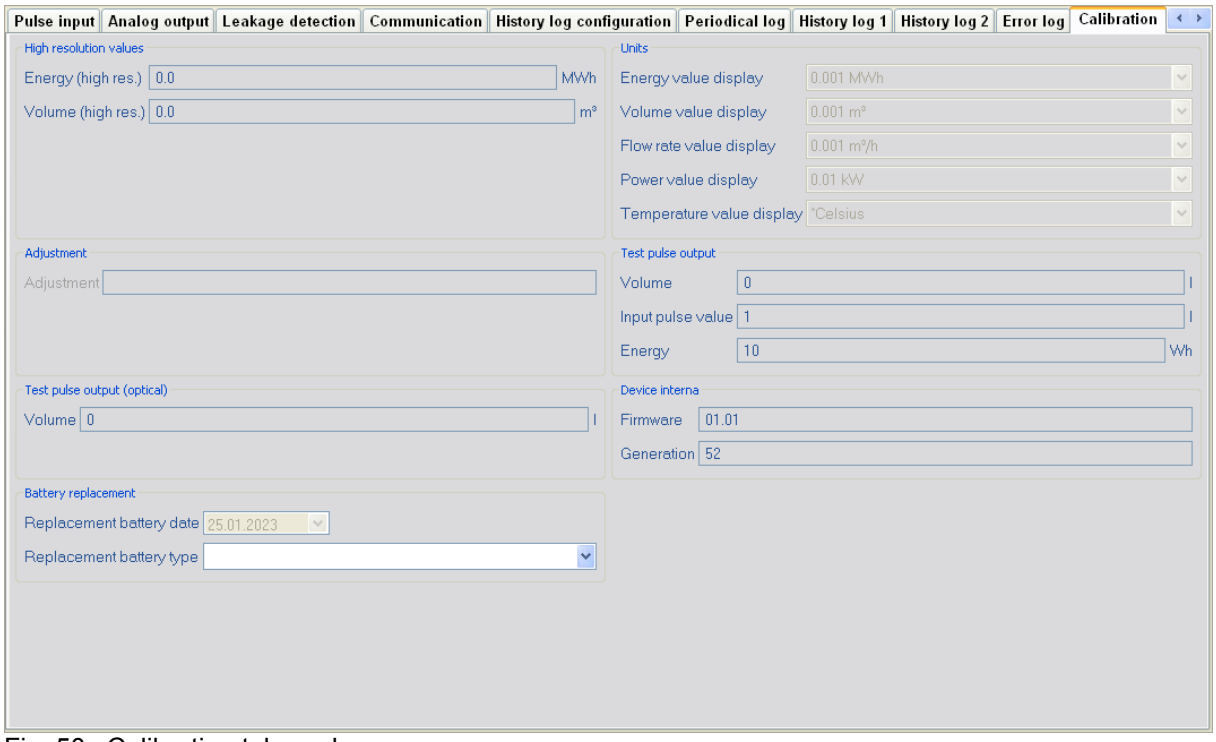


Fig. 50: Calibration tab card

10 HYDRUS

10.1 Features of the HYDRUS

The HYDRUS is a static ultrasonic water meter. It is used for precise recording and reading out of consumptions in all areas of water supply.
The HYDRUS is available in four variants: Radio, M-Bus, L-Bus and Pulse.
The display in IZAR@SET can differ, depending on the variant used.

10.1.1 Features

- Real data communication, open metering telegram, Prios telegram
- Long-term stability, even under difficult conditions
- Unlimited system compatibility
- Leak detection
- Higher performance than class D requirements
- Mounting in any installation position
- No measurement of air
- Insensitive against sedimentation
- Up to 16 years of battery lifetime
- Suitable for outdoor installation (frost-free)
- Display of error and alarm codes

10.1.2 General technical specifications

Medium (i.e. water) temperature range °C	0.1 ... 50
Temperature safety °C	1 ... 90
Ambient temperature in operation °C	1 ... 70
Ambient temperature, storage °C	-20 ... +70
Nominal pressure PN bar	16
Voltage supply	One or two 3.6 VDC lithium batteries
Battery life	Up to 12 years (one battery), up to 16 years (two batteries)
Interfaces	Optical, Radio 434 or 868 MHz, M-Bus, L-Bus, Pulse
Data storage	For events and consumption values
Class of protection	IP 68

10.1.3 Technical specifications of the display

Display	LCD, 8-digit
Units DN 15 - DN 32	Flow and volume (m³ + 3 decimal places)
Units DN 40 + DN 50	Flow (m³ + 3 decimal places); volume (m³ + 2 decimal places)
Possible values which can be displayed	Volume - Flow - Medium temperature - Display test - Current error and alarm status - Date - Primary and secondary address - Radio signal ON/OFF - Battery life - Due date- Error hours counter - Pulse value

10.1.4 Interfaces

Optical	For configuring the display information and radio telegram, for tests in a test banch, for operating the LCD display
Radio	434 or 868 MHz, configurable telegram (real data), open metering standard, Prios
M-Bus	2400 baud (can be changed to 300 baud), configurable telegram, cable length 1.5 m
L-Bus	In conjunction with radio, cable length 1.5 m
Pulse	Two configurable pulse outputs, cable length 1.5 m

10.2 Reading out and configuring the HYDRUS

10.2.1 Connect HYDRUS with IZAR@SET

Start the software and connect the HYDRUS to your PC/laptop (see Section 4 Connecting devices to IZAR@SET).

Click the *Optical* devices button to automatically identify the HYDRUS to be configured. While the software is scanning for the device and reading the data, a progress bar in the status line shows the status.

NOTE

A running process can be cancelled by pressing the red button.

You then proceed to the configuration. A user interface appears for setting the specific parameters of the HYDRUS.

NOTE

The tabs for setting the parameters for the HYDRUS are explained in the 868MHz radio variant. Most of the parameters are the same for the different variants. The few differences are additionally explained in the applicable place.

10.2.2 Common tab card

The tab card shows general data for the device.

Device	Values (current meter counts)
• Device name - HYDRUS • Q3 m³/h • Medium to be measured - water • Equipment options - 868 MHz Radio • Radio • Frequency	• Volume m³ • Forward volume m³ • Reverse volume m³ • Bacterial Risk count • Flow rate m³/h • Temperature °C • Temperature °F
Date and time	**Addresses**
• Date is entered automatically • Time is entered automatically • Operating hours - are entered automatically • Error hours - are entered automatically • Synchronise date on writing	• Primary address is entered automatically • Radio serial number is entered automatically • M-Bus serial number is entered automatically
Device status	
• shows the protection level (Field mode) and current error messages of the HYDRUS	

In Expert mode the date and time as well as the device's addresses can be changed.

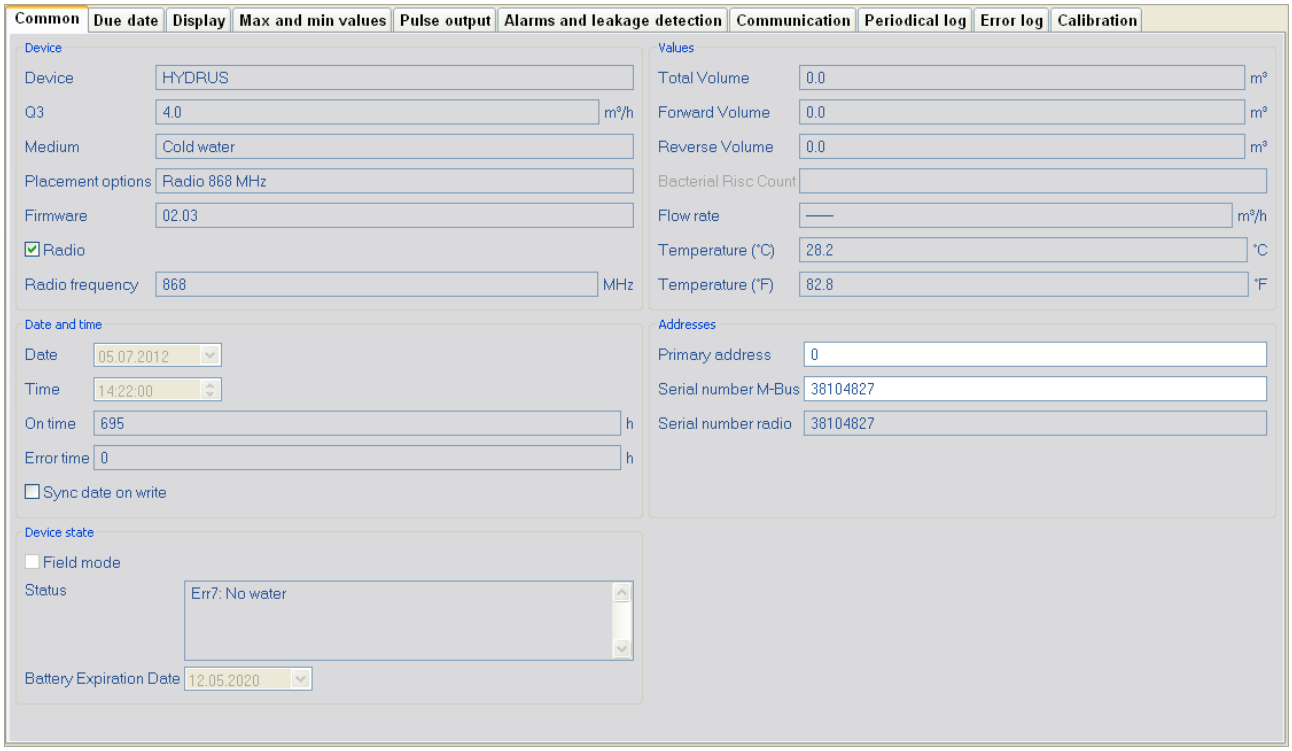


Fig. 51: General tab

10.2.3 Due date tab card

A set day is a copy of the relevant accumulating register at the set time.
The default setting for the set day is 31.12.

NOTE

The set day values always refer to the end of the day, i.e. to 23:59:59 on the day indicated.
This also makes a set day of 29.2 possible.

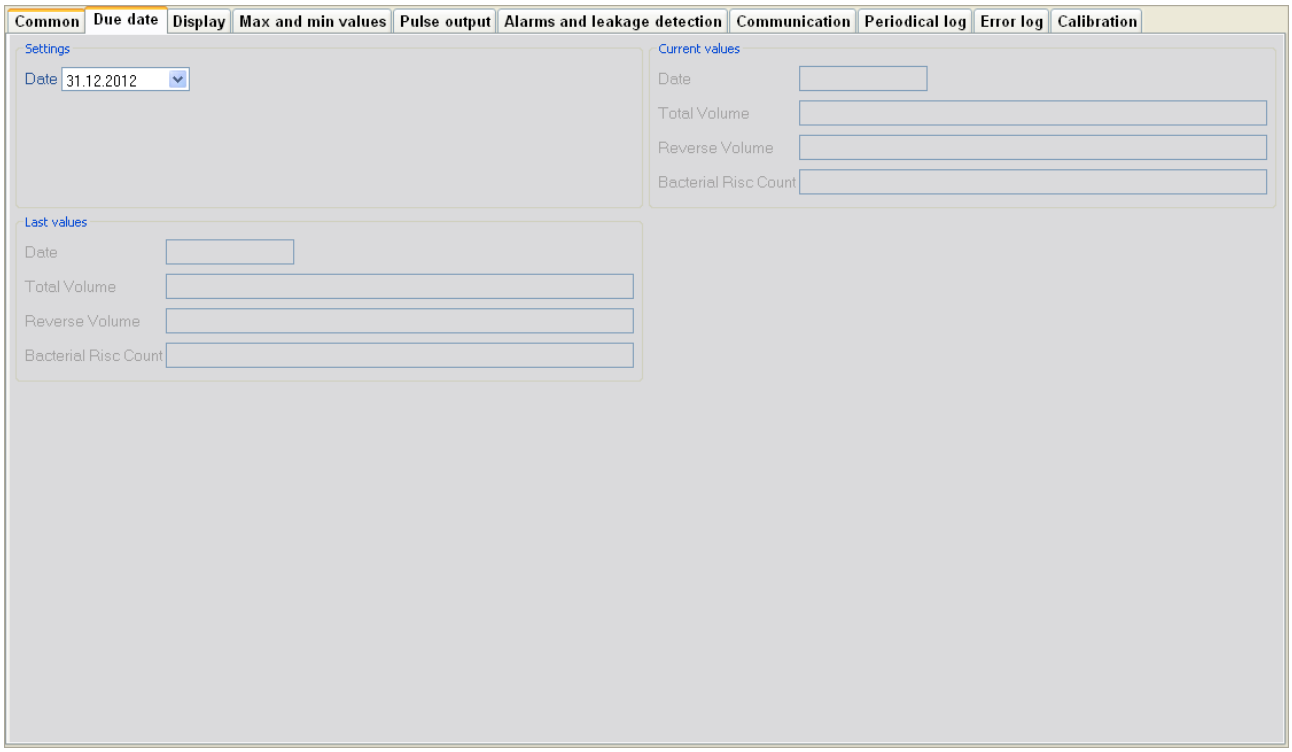


Fig. 52: Due date tab card

10.2.4 Display tab card

On delivery from the factory, the display is preset for the HYDRUS.

A list of all available fields is shown for the display. From these, select the required fields.

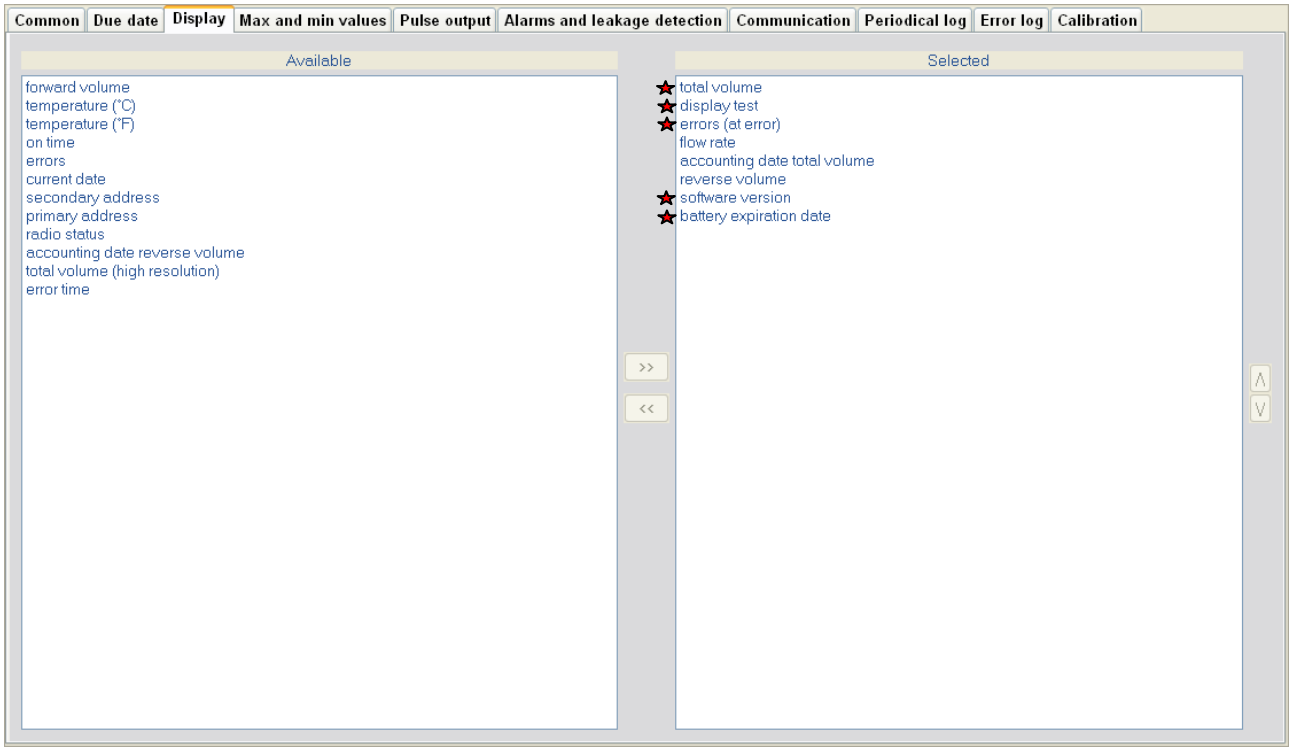


Fig. 53: Display tab card

★For approval reasons, the total volume, battery expiration date, errors (in case of error), software version and display test cannot be deleted from the display.

10.2.5 Maximum and Minimum Values tab card

This tab card has 2 sections, i.e. 2 tabs: Interval for maximum values and flow values (maximum and minimum).

In the left area, select the time interval with which you want to receive maximum and minimum values for the flow.

After clicking "Synchronise with periodical log", the max.- and minimum value with the periodical log is synchronised with the chosen time interval.

The synchronised values are then displayed in the area on the right.

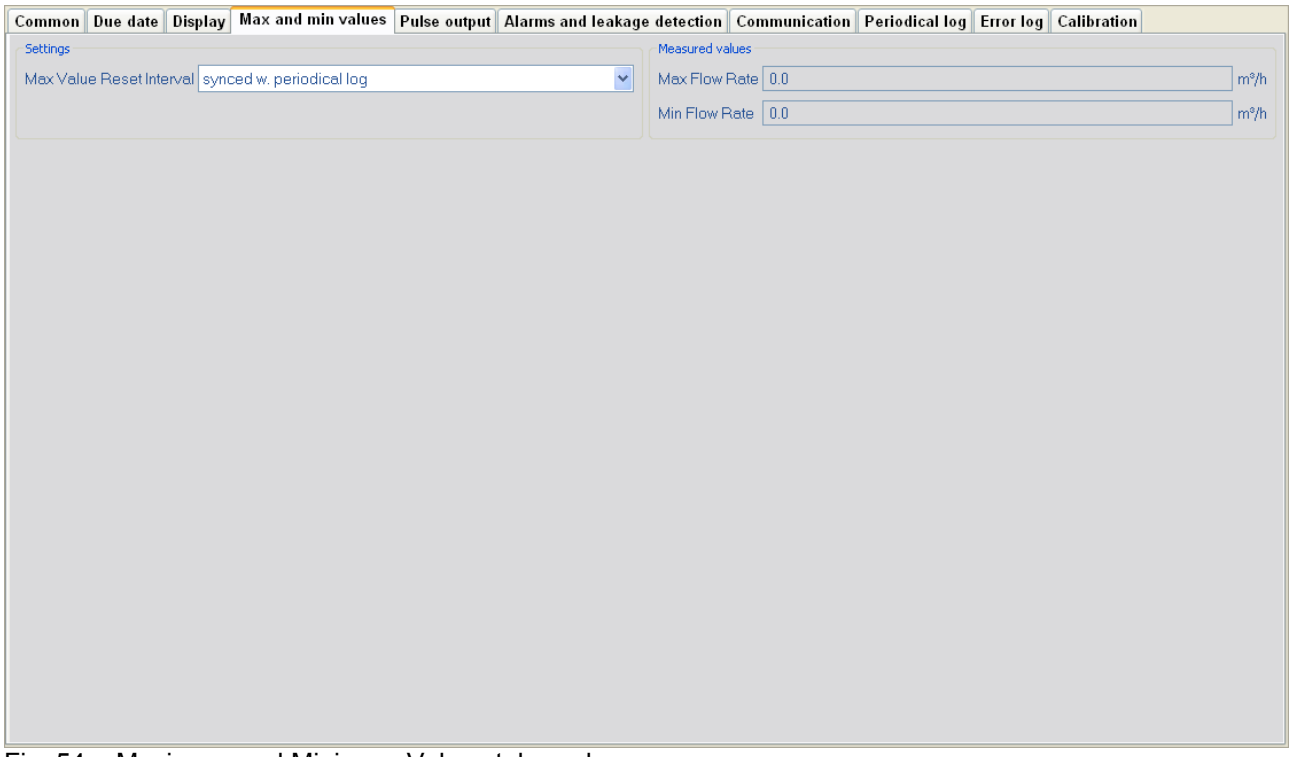


Fig. 54: Maximum and Minimum Values tab card

10.2.6 Pulse Output tab card

Two pulse outputs are available; however, they are not activated for the Radio, L-Bus and M-Bus variants of the device.

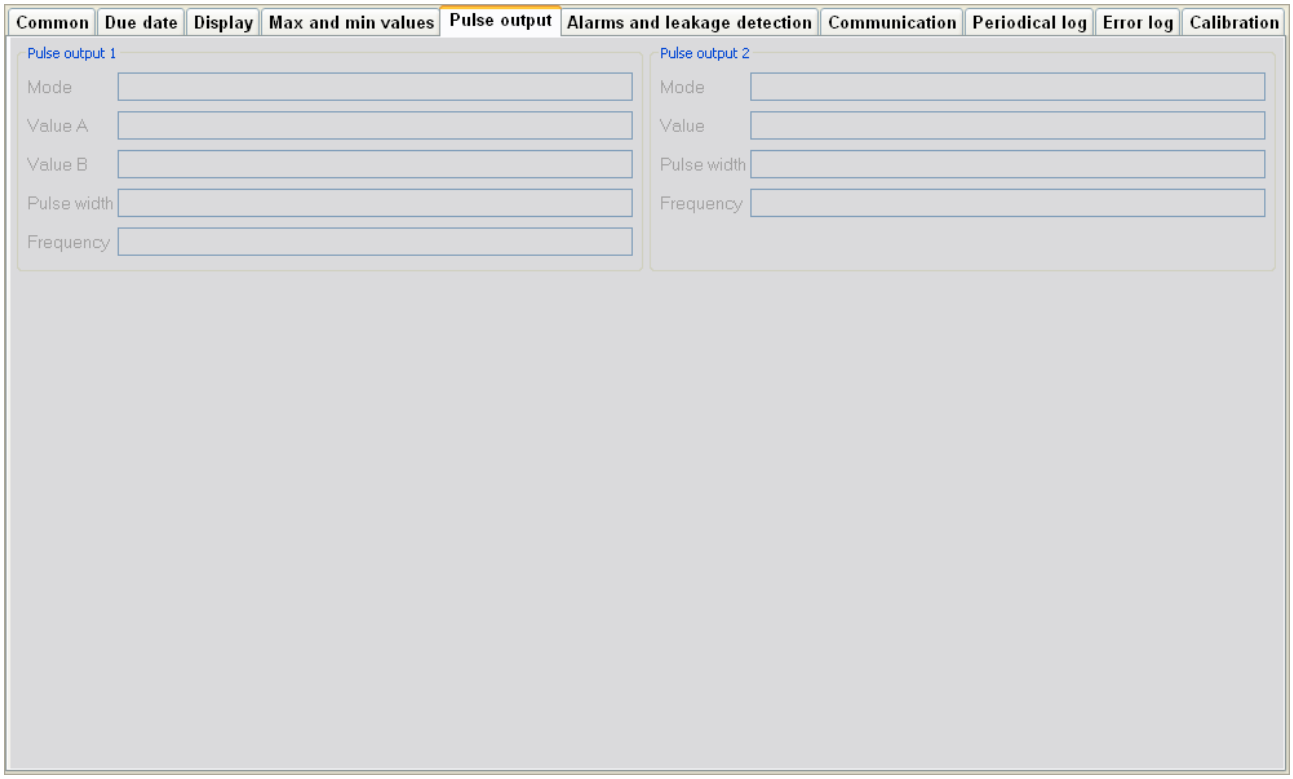


Fig. 55: Pulse Output tab

Pulse outputs for Pulse device variant

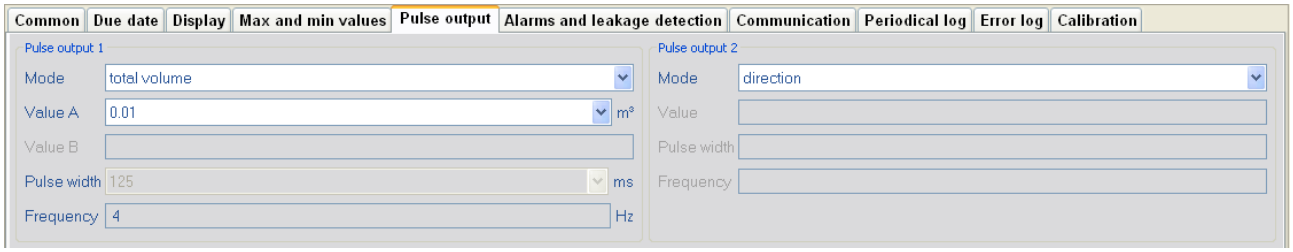


Fig. 56: Define pulse outputs (Pulse device variant)

Here you set the mode for the respective pulse output.
Pulse output 1 is used to select the mode: Volume, Forward volume, Backward volume, Forwards volume (high-resolution) or Volume (high-resolution).
With value A the volume per pulse can be selected.
Pulse output 2 is used to output an additional pulse signal (Forward volume, Directional signal, Error).

10.2.7 Alarm and Leakage Detection tab card

Click this tab to display activated and deactivated alarms; the leak detection and maximum alarm duration can be configured here.

Q3 area
Nominal size Q3: in m³/h

Water area:

The leakage alarm can be configured here.
Interval: the monitoring interval can be selected here.
Leakage detection: If the selected minimum flow is exceeded in the selected monitoring interval, a leak is signalled.

Alarm Setting area:

Maximum alarm duration can be set here (Visualisation via the display).

Alarm Detection area:

Different alarms can be activated or deactivated.

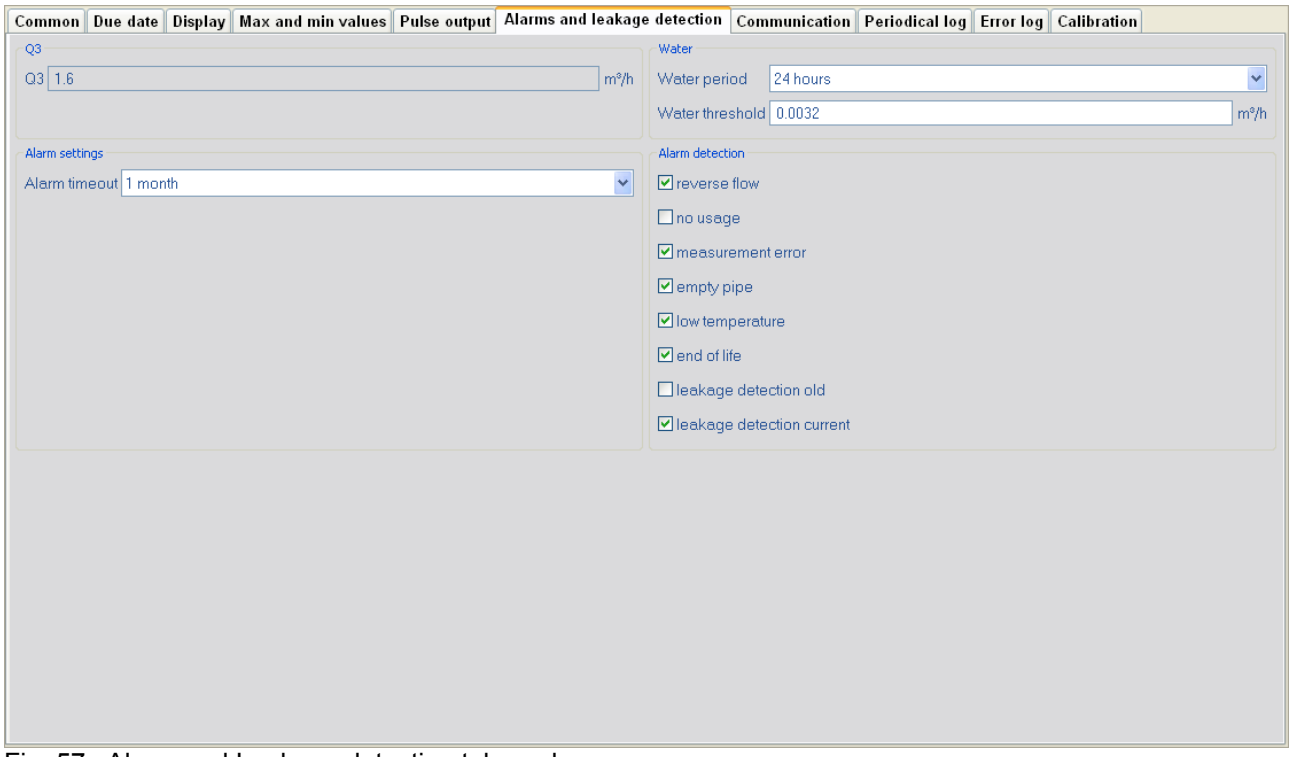


Fig. 57: Alarm and Leakage detection tab card

10.2.8 Communication tab card

Click this tab card to display the communication parameters.
The telegram content can be programmed for the customer's specific requirements. Apart from the protocol, the specific parameters for the device's internal radio are also set.

You can select a part of the values from the periodical log as data fields for a communication protocol.

Content of the telegram:
The available fields are displayed. Select the fields required for the telegram. The order of the fields can also be freely set.

Length of the telegram:
The length of the telegram is calculated and displayed. A maximum length of 150 bytes is possible for use as a radio telegram.

NOTE

Communication with the M-BUS enables a telegram length up to 250 bytes.

The length of the radio telegram affects the radio period and the calculated battery life; in general a setting between 8 s and 254 s is possible.

Here you can activate radio communication for the internal radio. The *Standby* parameter means that the device is in the ex works state.
As soon as the device sees water, the radio activates itself automatically, if the meter has been impinged with water for 3 hours without interruption, the radio remains continuously activated. If the water is interrupted within the 3 hours, the meter returns to *Standby*.
The radio protocol corresponds to the Hydrometer standard or the Open Metering standard and is encrypted. A transmission frequency of 868 MHz or 434 MHz is shown.

NOTE

The radio protocol can only be changed to Open Metering if the *Keep Password* function in the *User Preferences* > *Security* menu is NOT selected, so that the correct extension can be written for the radio key.

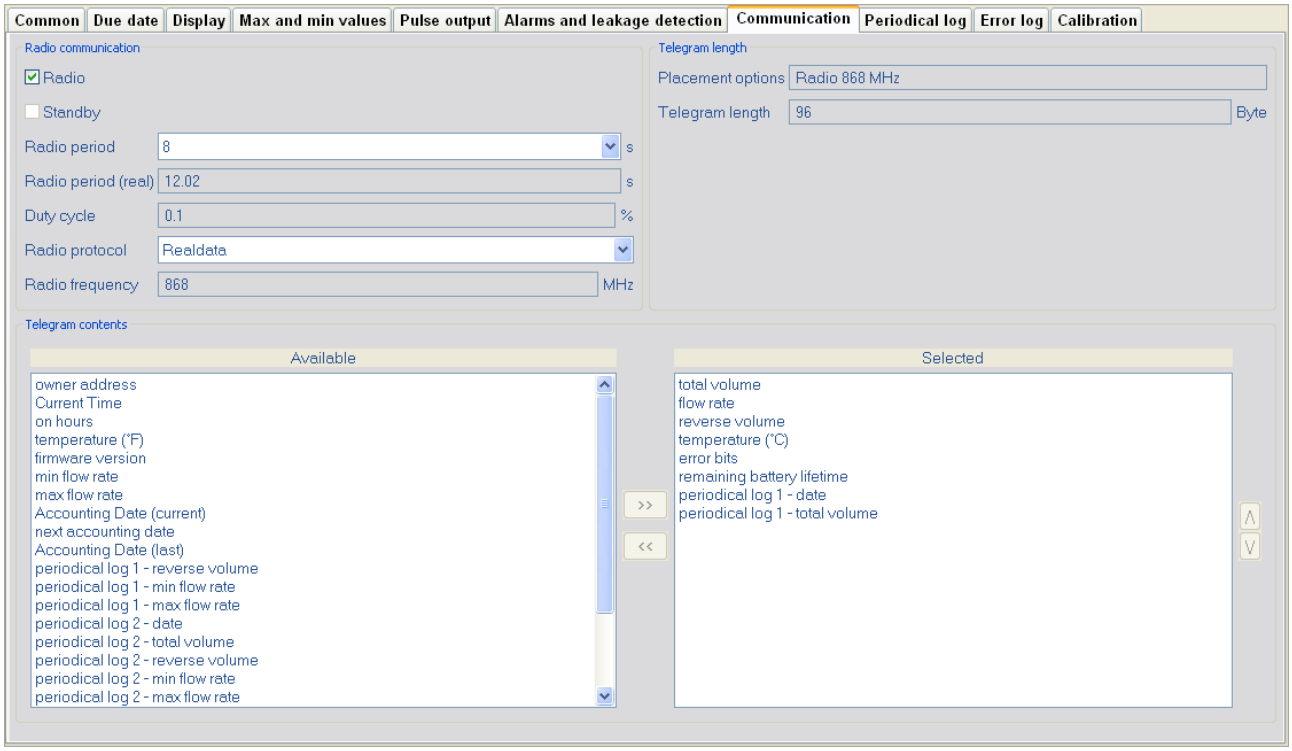


Fig. 58: Communication tab (in devices with internal radio)

10.2.9 Periodical Log tab card

In the *Log mode* and *Date Settings* areas you first set the interval and on what day the selected data (see Communication tab card) is to be saved. For example, set *Monthly* and *31st* of the month as the day.

You access the data using the menu *Commands* > *Read Periodical Log*. A data table appears as shown in Fig. 53.

The following 5 values maximum 32 entries are repeatedly stored in this log.

- Date
- Volume
- Backward volume
- Max. flow rate
- Min. flow rate

ATTENTION

The log memories have only a limited space available. If this space is full, the oldest entry is overwritten by the newest entry (FiFo).

You can export this table as a csv file and then process it in MS Office Excel. Click *Export Periodical Log* in the *Commands* menu. The csv file is stored in the "Data" folder of the program directory IZAR_SET/IZAR (see also Section 5.2 Menu bar).

An example:

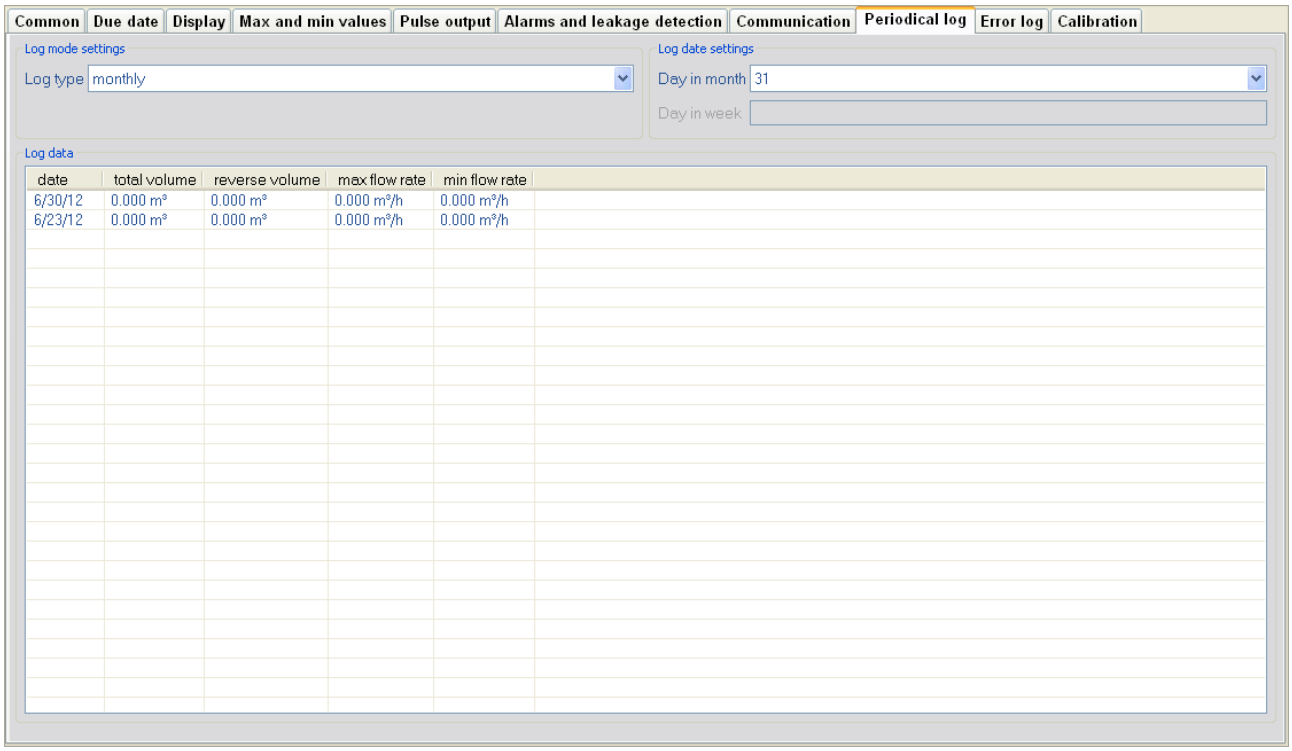


Fig. 59: Periodical log

10.2.10 Error Log tab card

Access the data using the menu *Commands* > *Read Error Log*. A data table appears as shown.

This list shows all the errors that have occurred. The date and time are also shown. The occurrence of an error is indicated by 0 or 1. 0 = error not occurred and 1 = error occurred. All errors are stored, even if several errors occur at the same time (as in the table shown).

NOTE

An error is not stored and indicated until it has been registered for longer than 6 minutes without interruption.

You can export the error log table as a csv file and then process it in MS Office Excel. Click *Export Error Log* in the *Commands* menu. The csv file is stored in the "Data" folder of the program directory IZAR_SET/IZAR (see also Section 5.2 Menu bar).

Error display	Error description
A1	Reverse flow
A2	Leakage alarm
A3	No usage
A4	Fault / Failure of ultrasonic or temperature measurement
A6	Low temperatures (below 3°C or higher 90°C)
A7	Air in the measuring pipe, no volume measurement
A9	Low battery

Error codes of the HYDRUS

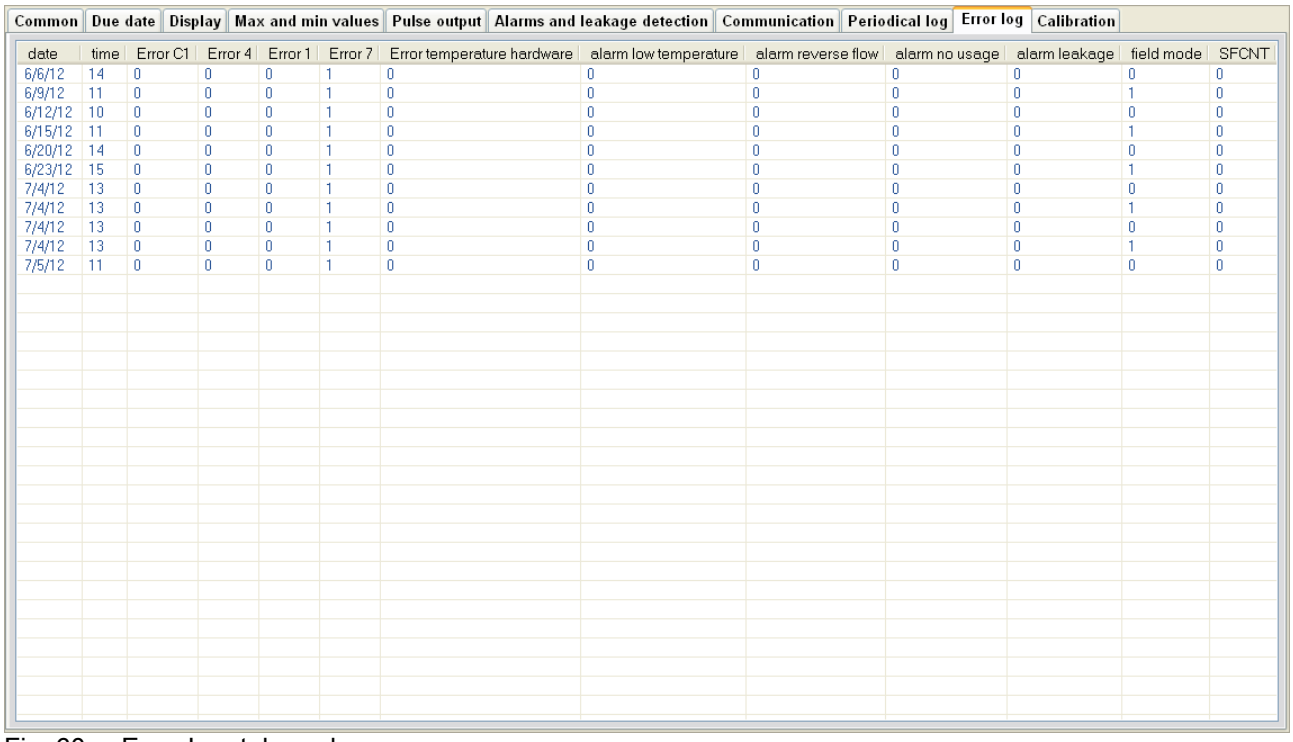

Common
Due date
Display
Max and min values
Pulse output
Alarms and leakage detection
Communication
Periodical log
Error log
Calibration
date time Error C1 Error 4 Error 1 Error 7 Error temperature hardware alarm low temperature alarm reverse flow alarm no usage alarm leakage field mode SFCNT
6/6/12 14 0 0 0 1 0 0 0 0 0 0 0
6/9/12 11 0 0 0 1 0 0 0 0 0 1 0
6/12/12 10 0 0 0 1 0 0 0 0 0 0 0
6/15/12 11 0 0 0 1 0 0 0 0 0 1 0
6/20/12 14 0 0 0 1 0 0 0 0 0 0 0
6/23/12 15 0 0 0 1 0 0 0 0 0 1 0
7/4/12 13 0 0 0 1 0 0 0 0 0 0 0
7/4/12 13 0 0 0 1 0 0 0 0 0 1 0
7/4/12 13 0 0 0 1 0 0 0 0 0 0 0
7/4/12 13 0 0 0 1 0 0 0 0 0 1 0
7/5/12 11 0 0 0 1 0 0 0 0 0 0 0

Fig. 60: Error Log tab card

10.2.11 Calibration tab card

The relevant data for test centres are shown here. The *meter readings* for Volume, Forward volume and Backward volume are also displayed.

These values can only be changed by test centres.

In addition, here you can see the units in which the volume and flow are given and how values have been adjusted.
In the test pulse output area (optical) you can read the volume unit in ml.

In the *Internal Device* area the Firmware, Generation and Production number of the device are displayed again.
In the *Battery expiration* area you can see the calculated expected battery life.

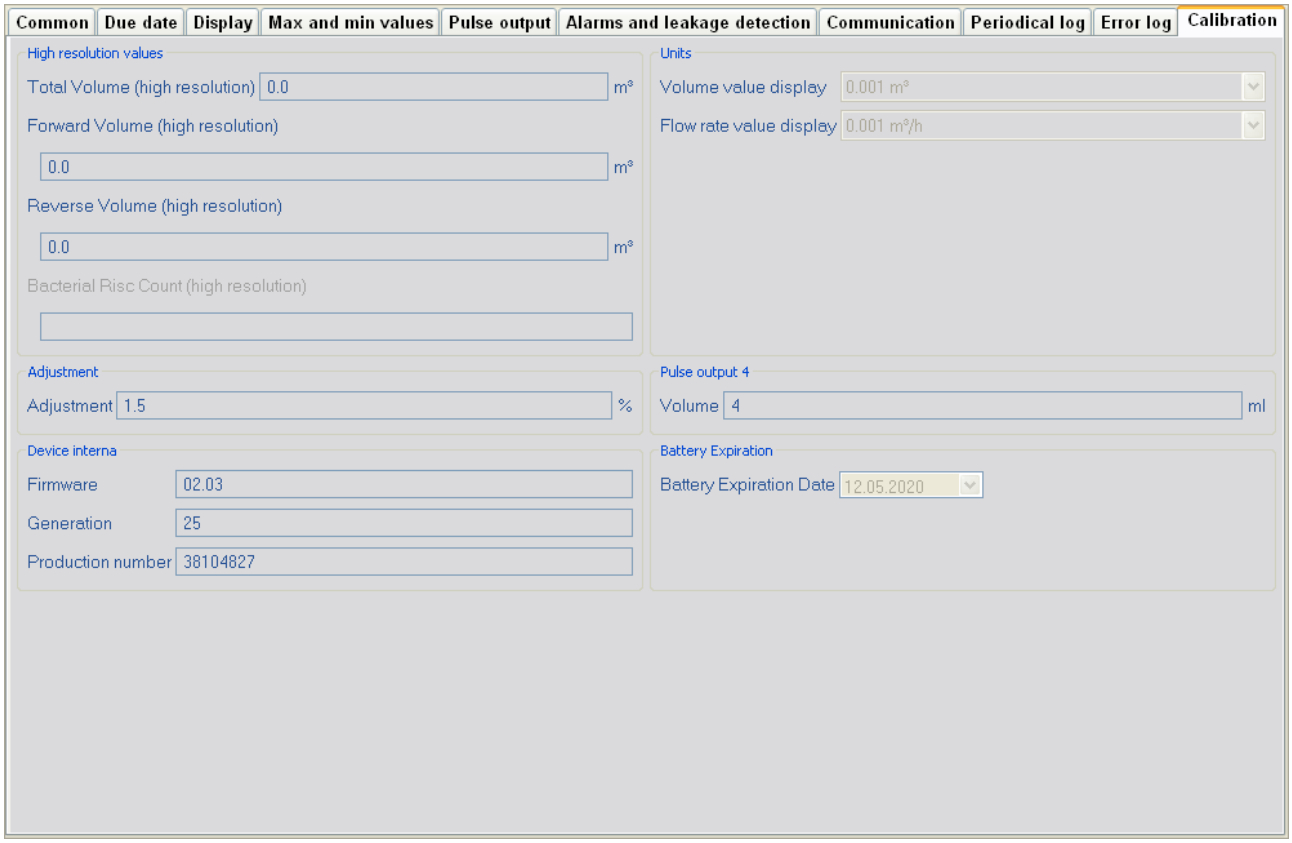


Fig. 61: Calibration tab card

11 RAY RADIO

11.1 Features of RAY RADIO

NOTE

The most important features are described here. Other information concerning installation can be obtained from the separate Installation Guide for RAY RADIO.

RAY RADIO is a fully electronic compact heat meter with impeller scanning for recording energy- and volume data. It enables highly accurate recording of billing data for medium temperatures of up to 90 °C at the volume measuring component.

11.1.1 Main features

- Electronic impeller scanning for recording flow rate
- Optical ZVEI interface equipped as standard
- Adjustable due date for billing
- Rotatable calculator
- Integrated 868 MHz radio module
- Single-line 7-digit display for reliable meter reading

11.1.2 Technical data

Versions/frequency band	868.95 MHz
Programming interface	Optical IrDa
Voltage supply	1 lithium battery 3 V
Battery life	10+2 years (typical)
Transmit interval	64 s
Display indication	LCD, 7-digit

11.1.3 Environmental conditions

Operating temperature	-0 ... + 55 °C
Storage temperature	-20 ... + 55 °C
Humidity	0 ... 93 %
Protection class	Heat meter IP 54 Cooling/heat meter and heat/cooling meter IP54 potted calculator

11.2 Installing and configuring RAY RADIO

11.2.1 Installing and starting RAY RADIO

- Install the RAY RADIO compact heat meter using the separate Installation Guide. The radio of the compact heat meter must be activated manually.
- Use the Bluetooth optohead of Diehl Metering and activate your Bluetooth connection (see Section 4 Connecting devices to IZAR@SET).
- Start the IZAR@SET software.
- Read RAY RADIO with “Optical devices”.

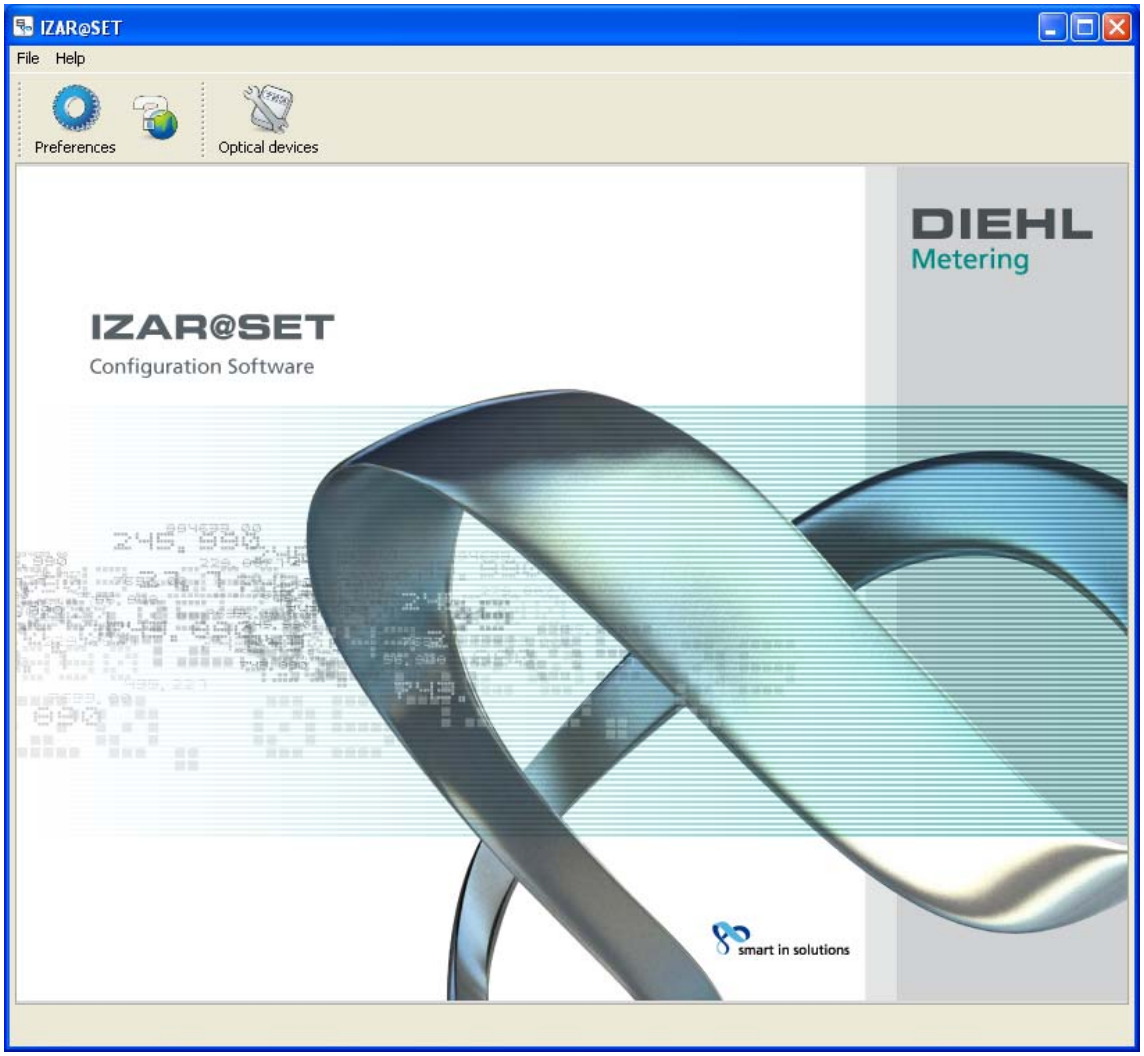


Abb. 62: Reading device

The Parameters tab card opens for setting the parameters of the compact heat meter.

11.2.2 All Parameters tab card overview

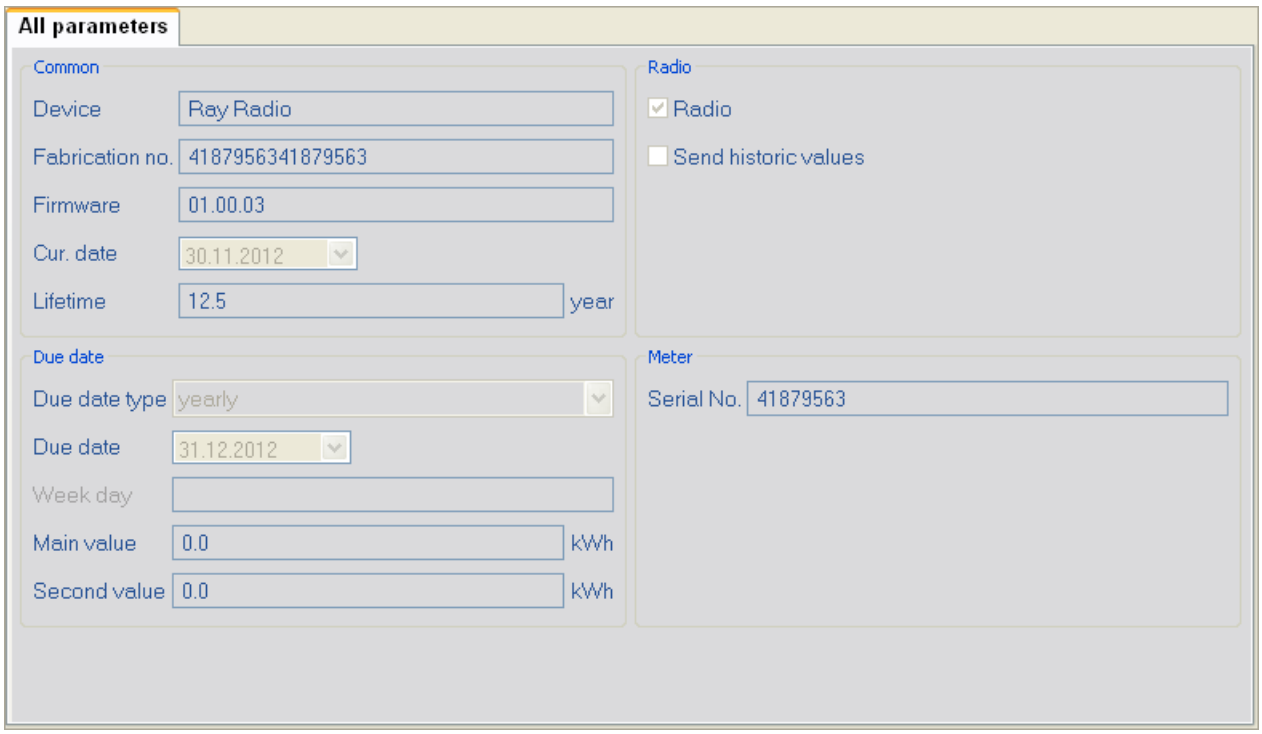


Abb. 63: All Parameters tab card

The parameters of the compact heat meter are divided in four areas: Common, Radio, Due Date and Meter. Here you can set the parameters or read information.

Common	Radio
• Device designation – RAY RADIO • Fabrication number • Firmware • Current date • Lifetime (years)	• Radio • Send historic values
Due Date	**Meter**
• Due date type – is entered automatically • Due date – adjustable at user level Expert or higher • Week day – is entered automatically • Main value (kWh) • Second value (kWh)	• Serial number – is entered automatically

Common information

The *Common* section shows the device designation and lifetime and you can also read and set the date here.
The lifetime shows the calculated lifetime of the compact heat meter.

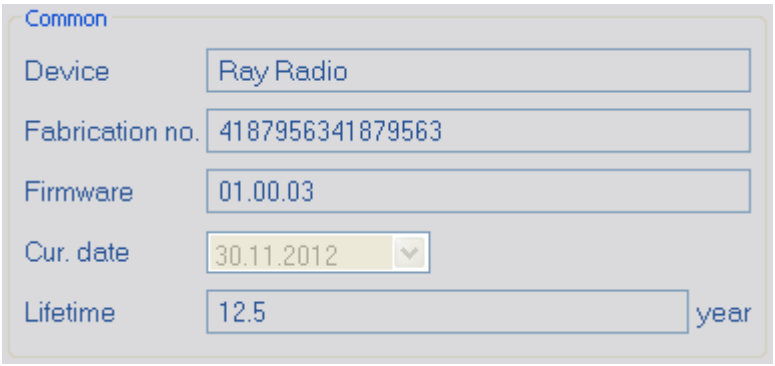


Abb. 64: Common data

Setting the radio

Abb. 65: Radio section

The *Radio* section shows you whether the radio is activated and whether history values are to be sent.

At the user levels Expert and Test Lab you can activate and deactivate radio in the *Radio* section. The default setting is radio deactivated.

NOTE

The compact heat meter is fully operational if radio is deactivated, but no data is transmitted over radio.

Abb. 66: Activating/deactivating radio (user levels Expert /Test Lab)

Set due date

In this section you can read the meter counts for the last due date.

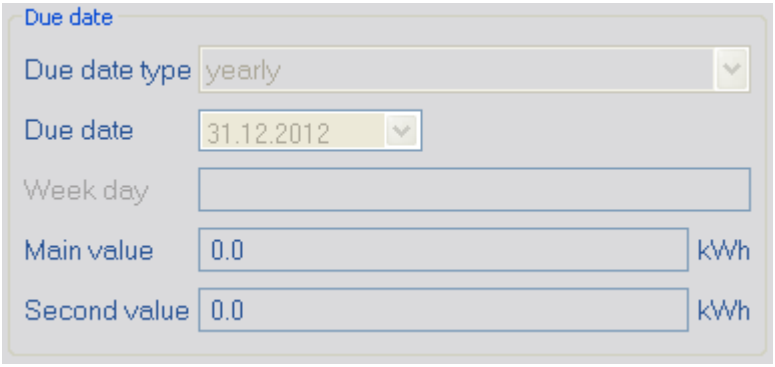


Abb. 67: Due Date section

You can use the due date settings to select which kind of due date is to be saved and at what times (e.g. days after the 28th of the month are always the end of the month).
If the compact heat meter has already saved a due date, the value can be read at *Main value* and *Second value*.

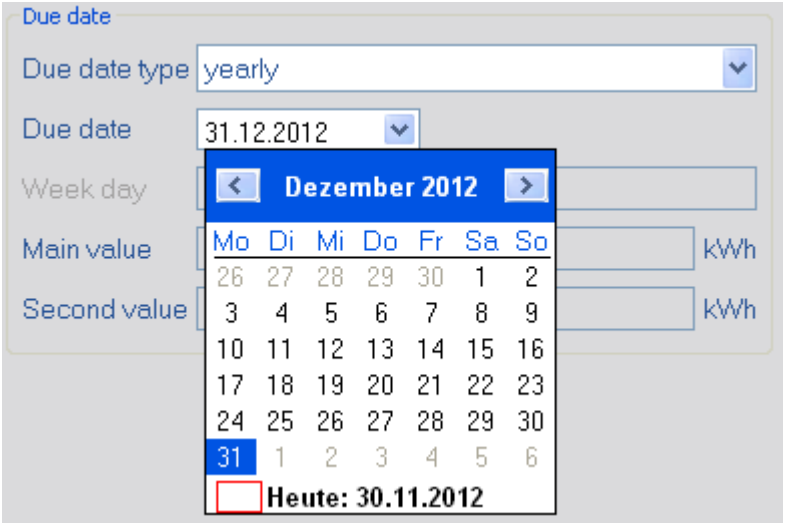


Abb. 68: Setting the due date (user levels Expert/Test Lab)

Meter information

This section shows the serial number of the device connected.

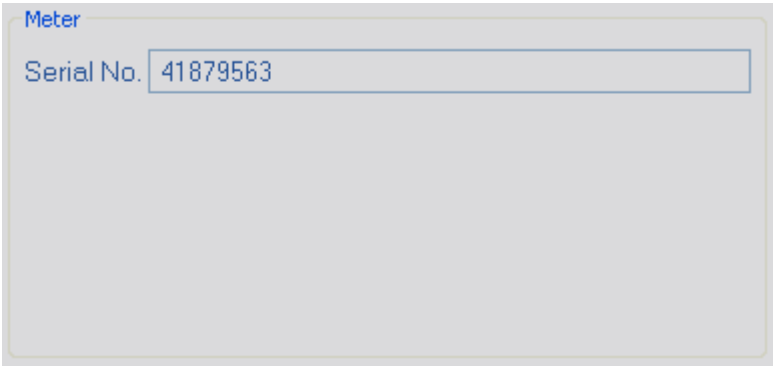


Abb. 69: Device connected

11.2.3 Reading the meter

The compact heat meter automatically sends the meter number, meter count and various items of operating information every 64 seconds. The data can be received by a mobile or static receiver. The data can also be read off the display.

12 CORONA ER

12.1 Features of CORONA ER

NOTE

The most important features are described here. Other information concerning installation can be obtained from the separate Installation Guide for CORONA ER.

CORONA ER is a fully electronic compact water meter with impeller scanning for recording volume data. It enables highly accurate recording of billing data for medium temperatures up to 90 °C.

12.1.1 Main features

- Electronic impeller scanning for recording flow rate
- Optical ZVEI interface equipped as standard
- Adjustable due date for billing
- Rotatable calculator
- Integrated 868 MHz radio module
- Single-line 7-digit display for reliable meter reading

12.1.2 Technical data

Versions/frequency band	868.95 MHz
Programming interface	Optical IrDa
Voltage supply	1 lithium battery 3 V
Battery life	10+2 years (typical)
Transmit interval	64 s
Display indication	LCD, 7-digit

12.1.3 Environmental conditions

Operating temperature	-0 ... + 55 °C
Storage temperature	-20 ... + 55 °C
Humidity	0 ... 93 %
Protection class	IP 68

12.2 Installing and configuring CORONA ER

12.2.1 Installing and starting CORONA ER

- Install the CORONA ER compact water meter using the separate Installation Guide. The radio of the compact water meter must be activated manually.
- Use the Bluetooth optohead of Diehl Metering and activate your Bluetooth connection (see Section 4 Connecting devices to IZAR@SET).
- Start the IZAR@SET software.
- Read CORONA ER with “Optical devices”.

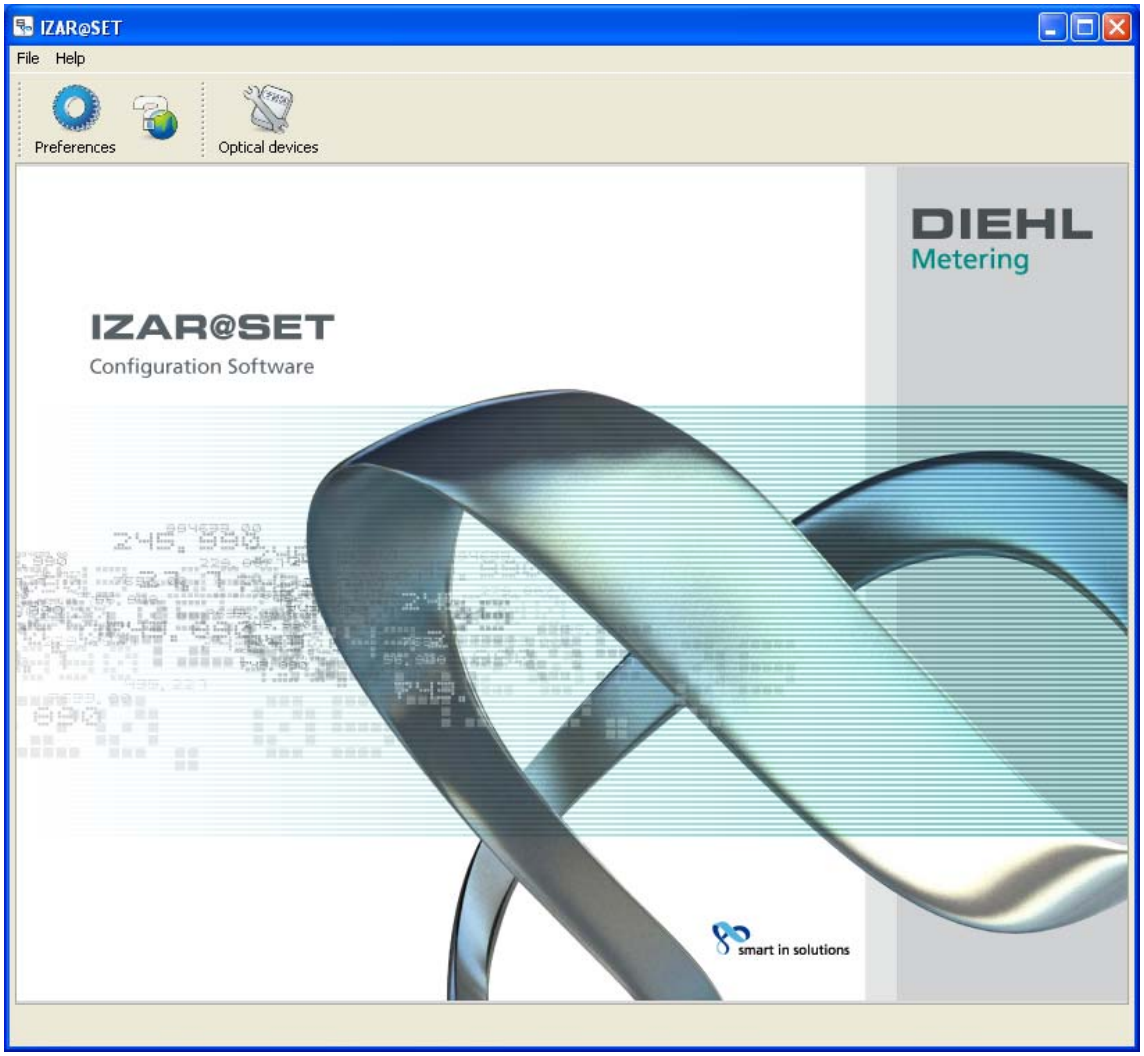


Abb. 70: Reading device

The Parameters tab card opens for setting the parameters of the compact water meter.

12.2.2 All Parameters tab card overview

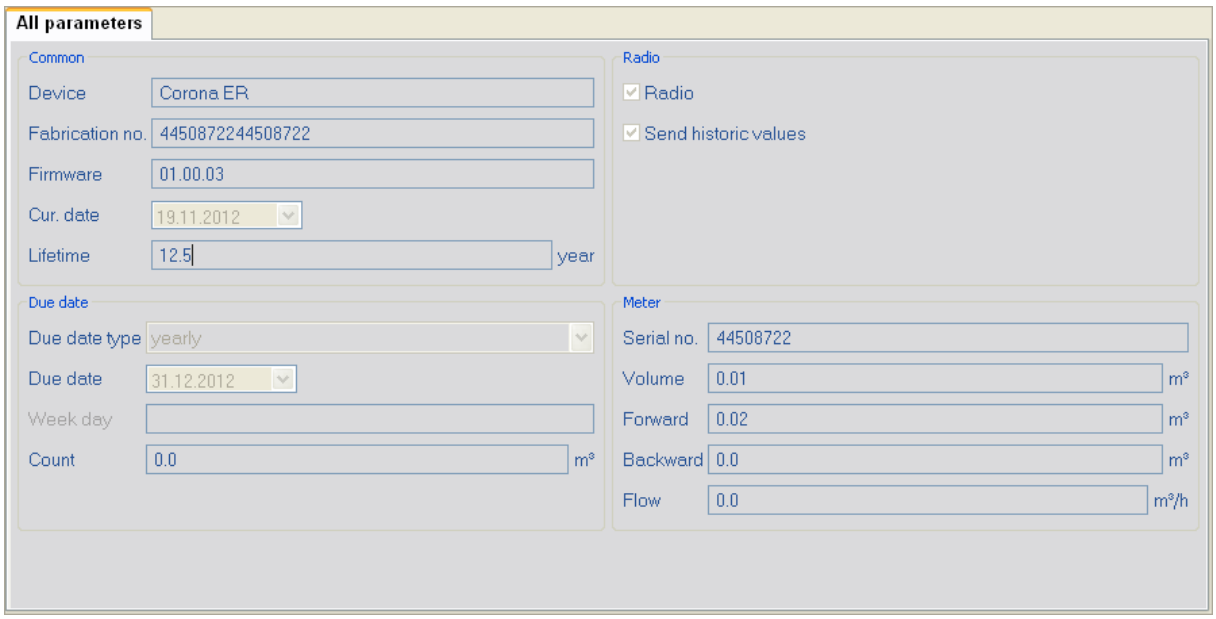


Abb. 71: All Parameters tab card

The parameters of the compact water meter are divided in four areas: Common, Radio, Due date and Meter. Here you can set the parameters or read information.

Common	Radio
• Device designation – CORONA ER • Fabrication number • Firmware • Current date • Lifetime (years)	• Radio • Send historic values
Due date	**Meter**
• Due date type – is entered automatically • Due date – adjustable at user level Expert or higher • Week day – is entered automatically • Count (m³)	• Serial number – is entered automatically • Volume (m³) – is entered automatically • Forward (m³) – is entered automatically • Backward (m³) – is entered automatically • Flow (m³/h) – is entered automatically

Common information

The *common* section shows the device designation and lifetime and you can also read and set the date here.
The lifetime shows the calculated lifetime of the compact water meter.

Abb. 72: Common data

Setting the radio

Abb. 73: Radio section

The *Radio* section shows you whether the radio is activated and whether history values are to be sent.

At the user levels Expert and Test Lab you can activate and deactivate radio in the *Radio* section. The default setting is radio deactivated.

NOTE

The compact water meter is fully operational if radio is deactivated, but no data is transmitted over radio.

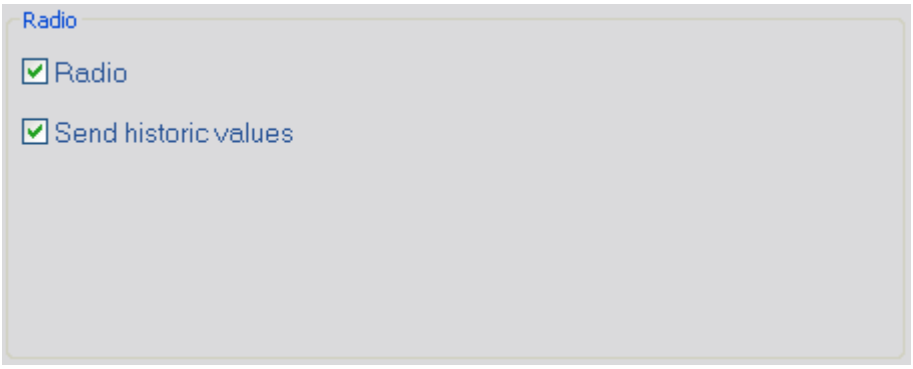


Abb. 74: Activating/deactivating radio (user levels Expert /Test Lab)

Set due date

In this section you can read the meter count for the last due date.

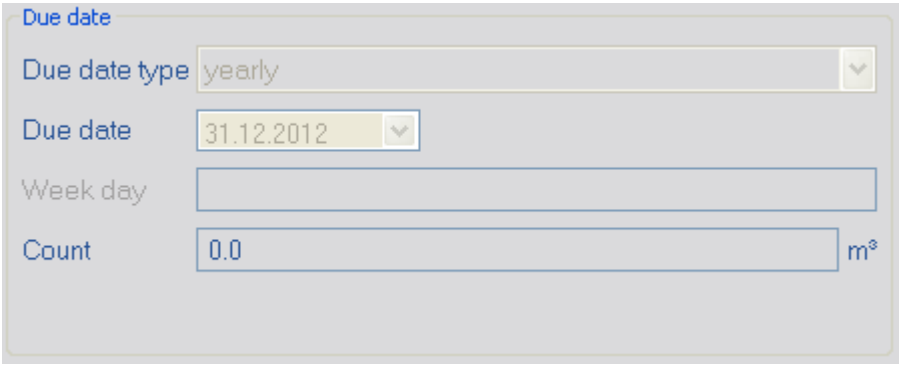


Abb. 75: Due date section

You can use the due date settings to select which kind of due date is to be saved and at what times (e.g. days after the 28th of the month are always the end of the month).
If the compact water meter has already saved a due date, the value can be read at *Count*.

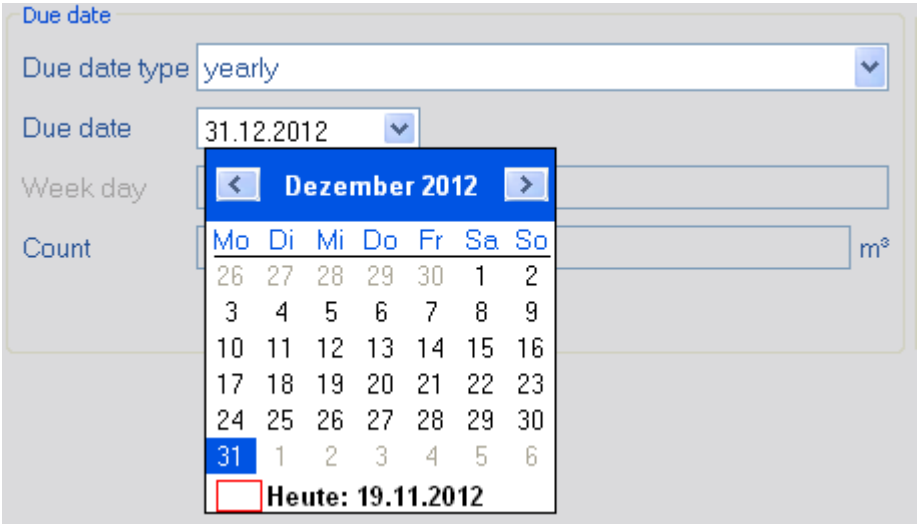


Abb. 76: Setting the due date (user levels Expert/Test Lab)

Meter information

This section shows the serial number of the device connected and the last meter counts.

Abb. 77: Device connected

12.2.3 Reading the meter

The compact water meter automatically sends the meter number, meter count and various items of operating information every 64 seconds. The data can be received by a mobile or static receiver. The data can also be read off the display.

13 IZAR RADIO COMPACT ACM

13.1 Features of the IZAR RADIO COMPACT ACM

NOTE

The most important features are listed here. For further details on the installation, communication modules, etc., please refer to the separate installation instructions for the IZAR RADIO COMPACT ACM.

The IZAR RADIO COMPACT ACM is a compact radio module for diaphragm gas meters with an absolute ENCODER AE2 or AE3 interface. The radio module is used for optimum readouts where access is difficult.

13.1.1 Main features

- Installation in standby mode
- Transmission of the meter data by radio to a mobile or stationary receiver
- Saving and transmission of a due date (e.g. end of the month)
- Protocol according to OMS-S v2
- For all types of meters
- On-site programming using the IrDa interface
- Battery supply with typical life of 12 years

13.1.2 Operating principle

The IZAR RADIO COMPACT ACM radio module consists of an electronics unit, which records and saves meter information in the form of real meter data. The radio module transmits the meter number, meter reading and various operating information according to a defined transmission schedule. The data can be recorded by a mobile or stationary receiver (e.g. IZAR RDC STANDARD)

13.1.3 Technical specifications

Versions/frequency band	868.95 MHz
Modulation	FSK
Transmitting power	7 mW
Transmission	Unidirectional
Transmission range	Depending on the environment, up to 400 m
Programming interface	Optical IrDa
Fulfilled standards	EN 60950 Information technology equipment - Safety - Part 1: General requirements
Voltage supply	1 lithium battery 3.6 V
Battery life	12 years (typically)

13.1.4 Environmental conditions

Operating temperature	°C -25 ... + 55
Storage temperature	°C - 30 ... + 60
Humidity	% 0 ... 85
Class of protection	IP 54

13.2 Installing and configuring the IZAR RADIO COMPACT ACM

NOTE

The most important features are listed here. For further information on installing the radio module, please refer to the separate installation instructions for the IZAR RADIO COMPACT ACM.

13.2.1 Installing and starting the IZAR RADIO COMPACT ACM

1. Install the IZAR RADIO COMPACT ACM radio module on the relevant meter using the separate installation instructions. The radio module activates itself automatically.
2. Use the Bluetooth opto-head of Diehl Metering and activate your Bluetooth connection (see Section 4 Connect devices with IZAR@SET).
3. Start the IZAR@SET software.
4. Use "Optical devices" to read out the radio module.

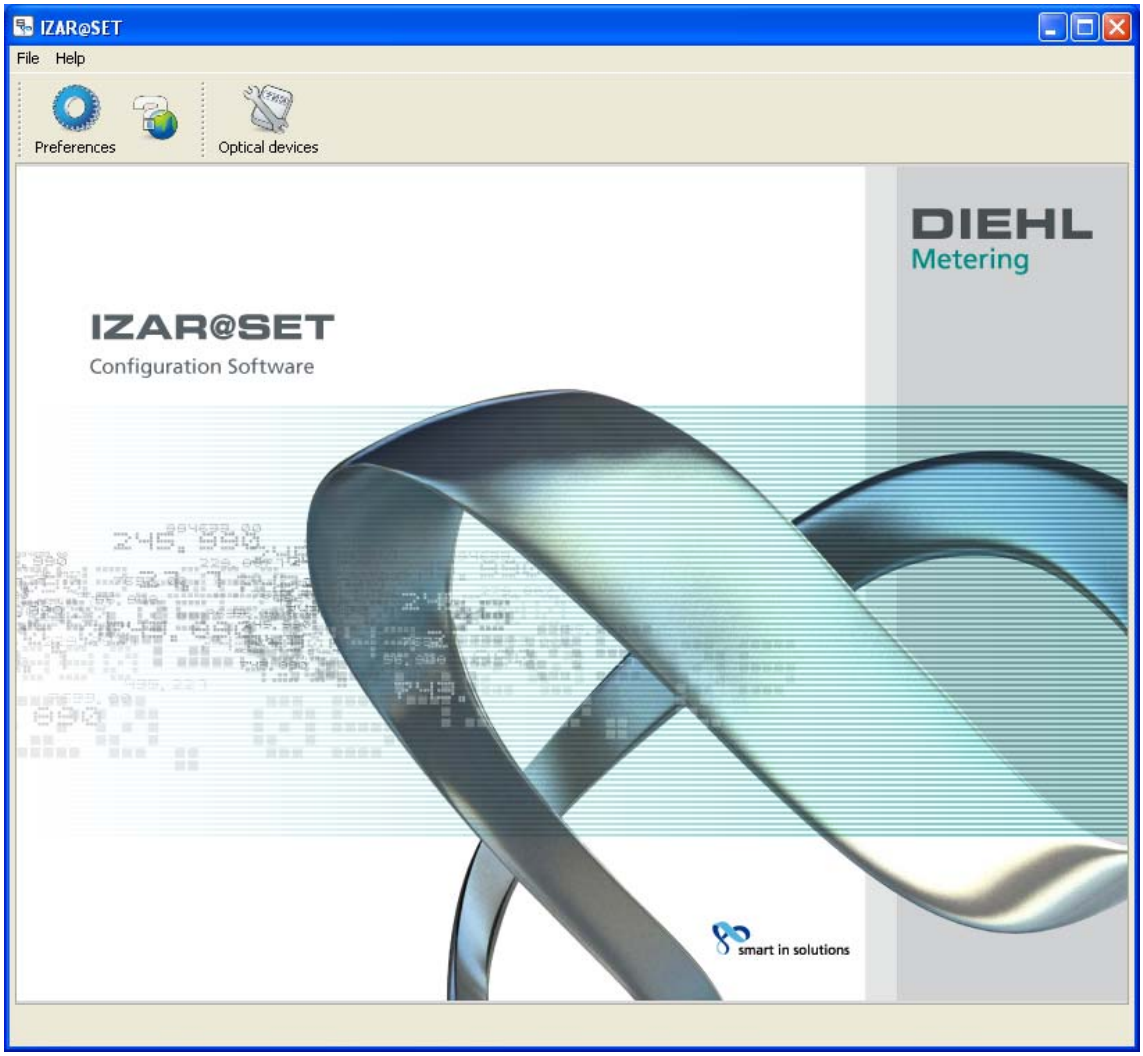


Fig. 78: Read out the device

The Parameters tab card opens. Here you can set the parameters of the radio module.

13.2.2 All Parameters tab card overview

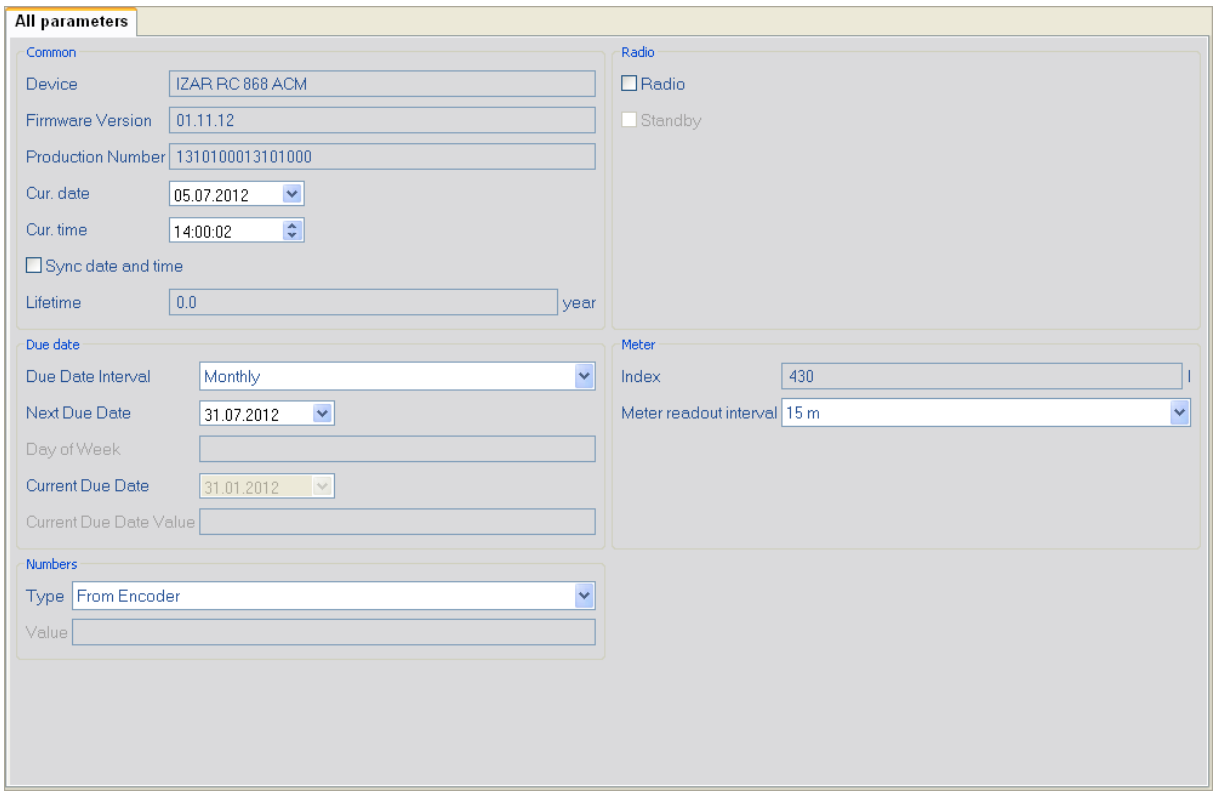


Fig. 79: All Parameters tab card

The parameters of the radio module are divided into five areas: Common, Due date, Numbers, Radio and Meter. Here you can set the parameters or read values and information.

13.2.3 Common information

The *Common* area displays the device name and the life. You can also read and set the date and time.
When you enable the *Synchronise date and time* function, the date and time are compared with your laptop or PC, as soon as you click *Write*. The life shows the calculated life of the radio module.

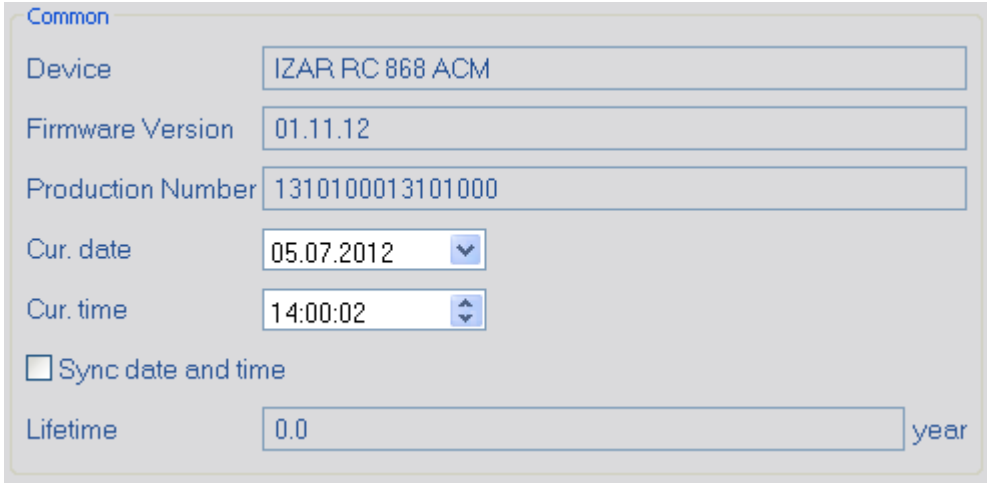


Fig. 80: Common information

13.2.4 Set due date

With the due date settings you can choose what type of due date is to be saved and at what times (e.g. days >28th of the moth is always at the end of the month).
If the radio module already has a due date saved, the value can be read at *Current Due Date* and *Current Due Date Value.*

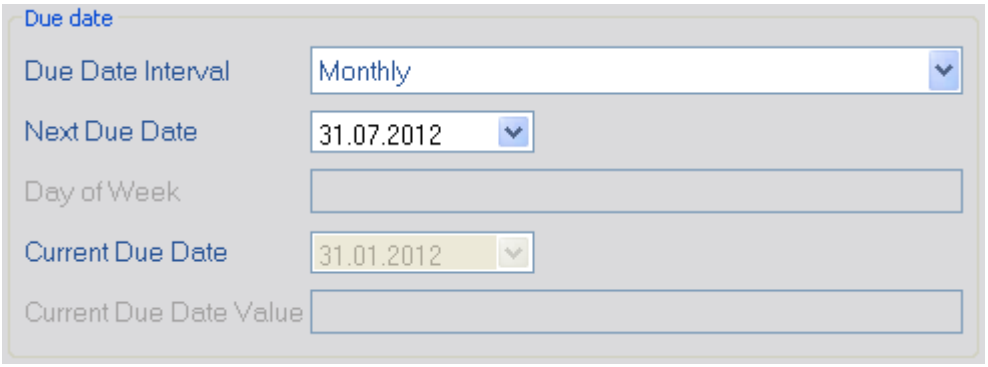


Fig. 81: Set due date type

13.2.5 Set additional number

Here you can issue an additional number manually, according to the open metering specifications (OMS-S). Use the drop-down menu to define the type of number. If the connected meter has its own ownership number (according to OMS-S) and you want this to be transmitted to you, select "From encoder"

Fig. 82: Set other meter numbers

13.2.6 Adjust radio

Here you can generally activate the radio or set the radio module to standby. The default setting is radio on and standby on.

NOTE

If the radio is off, the radio module does not broadcast, even if it activates itself

Fig. 83: Activate/deactivate radio

13.2.7 Meter information

In this area you see the meter reading of the connected meter.

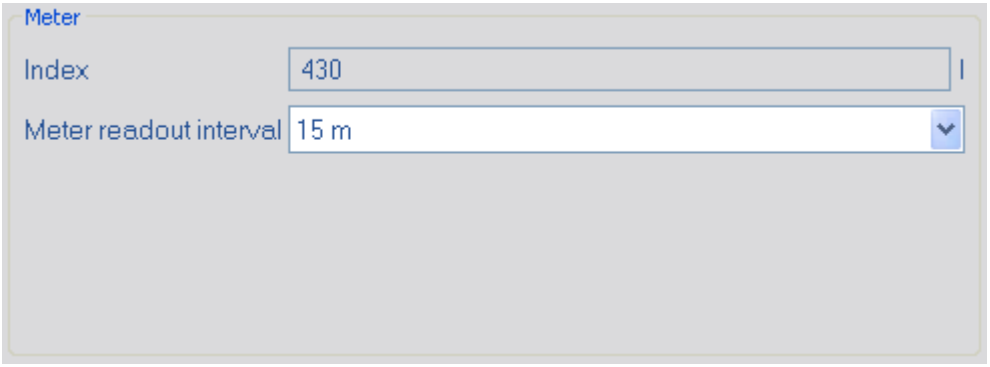


Fig. 84: Read meter reading

13.2.8 Meter readout interval

In Expert mode you can also select the reading interval.

The reading interval describes how frequently the module reads out the meter. The larger the interval, the longer the battery life (e.g. at 15 min the battery life is 12 years)

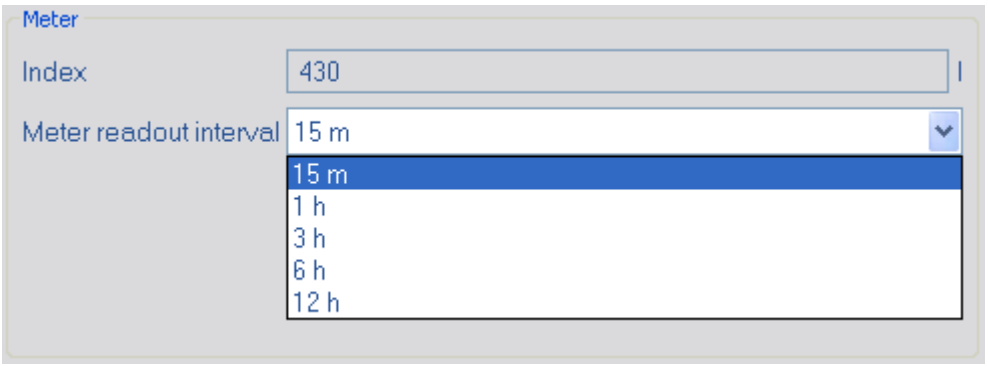


Fig. 85: Set reading interval in Expert mode

14 IZAR RADIO EXTERN SCR

14.1 Features of the IZAR RADIO EXTERN SCR

NOTE

The most important features are listed here. For further details on the installation, communication modules, etc., please refer to the separate installation instructions for the IZAR RADIO EXTERN SCR.

The IZAR RADIO EXTERN SCR is an external radio module for water and gas meters with SCR/SCR+ interface for optimum reading in case of difficult access.

14.1.1 Main features

- Easy installation
- Automatic radio activation following connection of the meter
- Transmission of the meter data by radio to a mobile or stationary receiver
- Saving and transmission of a due date (e.g. end of the month)
- For all types of water and gas meters with SCR/SCR+ interface
- On-site programming using the IrDa interface
- Saving and transmission of a reference date
- Battery supply with typical life of 12 years

14.1.2 Operating principle

The IZAR RADIO EXTERNAL SCR radio module consists of an electronics unit, which records and saves meter information in the form of real meter data. The radio module transmits the meter number, meter reading and various operating information according to a defined transmission schedule. The data can be recorded by a mobile or stationary receiver (e.g. IZAR RDC STANDARD).

14.1.3 Technical specifications

Versions/frequency band	868.95 MHz
Modulation	FSK
Transmitting power	7 mW
Transmission	Unidirectional
Transmission range	Depending on the environment, up to 400 m
Programming interface	Optical IrDa
Fulfilled standards	EN 60950 Information technology equipment - Safety - Part 1: General requirements
Voltage supply	2 lithium batteries 3.6 V
Battery life	12 years (typically)
Reading interval	15 min, monthly reference date
Transmission interval	15 s

14.1.4 Environmental conditions

Operating temperature	°C -15 ... + 55
Storage temperature	°C - 15 ... + 55
Humidity	% 0 ... 100
Class of protection	IP 68

14.2 Installing and configuring the IZAR RADIO EXTERNAL SCR

NOTE

The most important features are listed here. For further information on installing the radio module, please refer to the separate installation instructions for the IZAR RADIO EXTERNAL SCR.

14.2.1 Installing and starting the IZAR RADIO EXTERNAL SCR

- Install the IZAR RADIO EXTERNAL SCR radio module on the relevant meter using the separate installation instructions. The radio module activates itself automatically.
- Use the Bluetooth opto-head of Diehl Metering and activate your Bluetooth connection (see Section 4 Connect devices with IZAR@SET).
- Start the IZAR@SET software.
- Use "Optical devices" to read out the radio module.

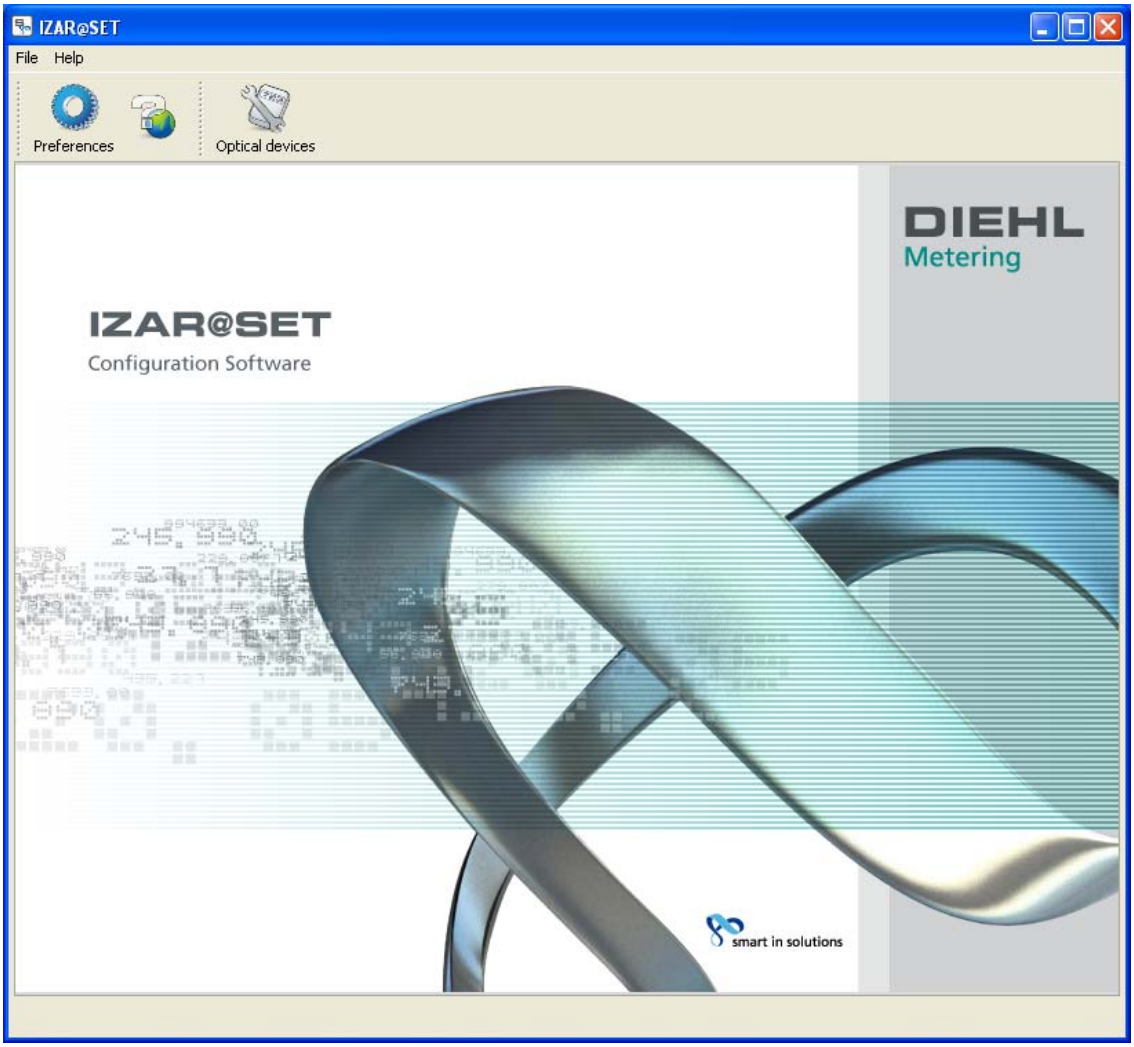


Fig. 86: Read out the device

The Parameters tab opens. Here you can set the parameters of the radio module.

14.2.2 All Parameters tab card overview

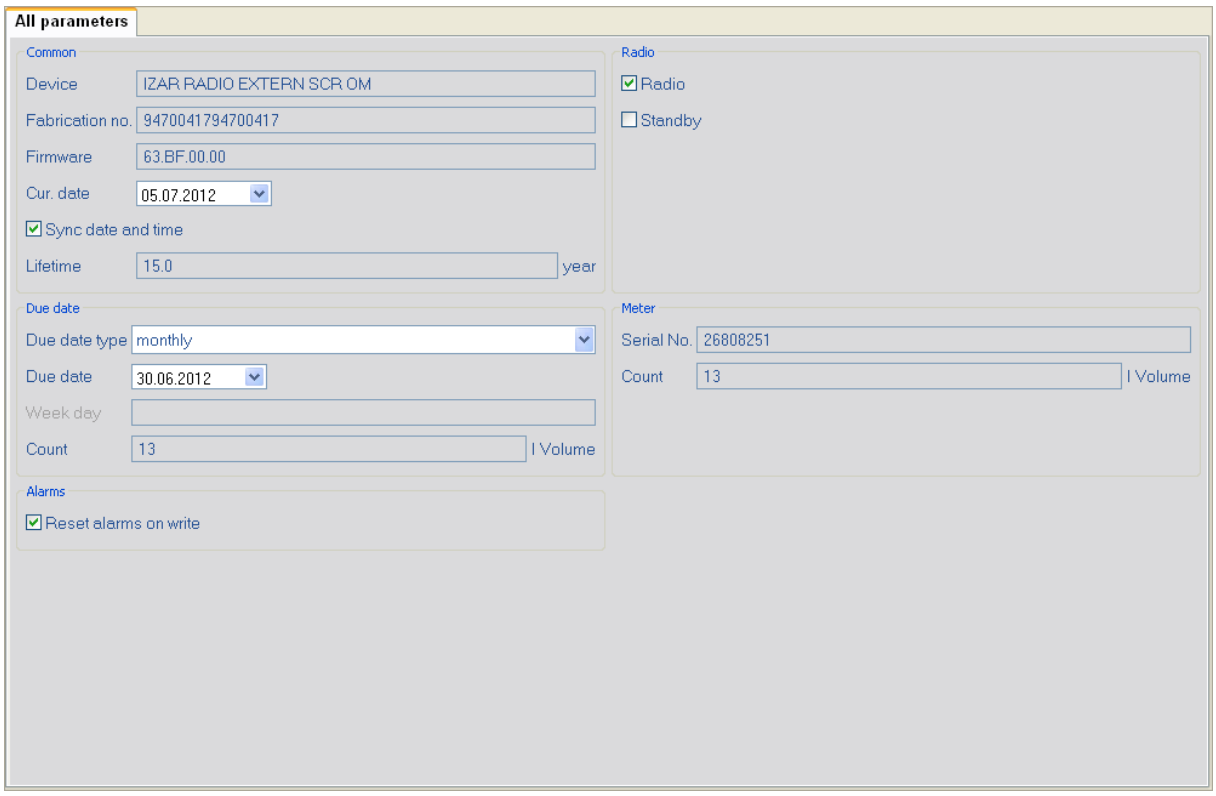


Fig. 87: All Parameters tab card

The parameters of the radio module are divided into five areas: Common, Due date, Alarms, Radio and Meter. Here you can set the parameters or read values and information.

14.2.3 Common information

The *Common* area displays the device name and the life. You can also read and set the date.
When you enable the *Synchronise date and time* function, the date and time are compared with your laptop or PC, as soon as you click *Write*. The life shows the calculated life of the radio module.

Fig. 88: Common information

14.2.4 Set due date

In this area you read the meter reading of the last due date.
With the due date settings you can choose what type of due date is to be saved and at what times (e.g. days >28th of the moth is always at the end of the month).
If the radio module already has a due date saved, the value can be read at *Count*.

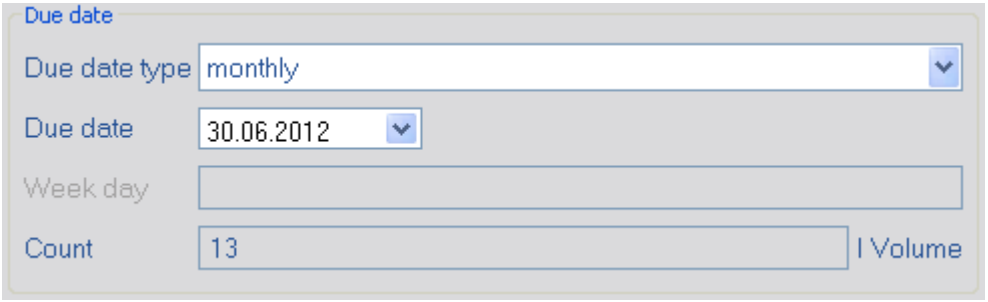


Fig. 89: Set due date type

14.2.5 Reset alarms

In this area you choose whether registered alarms are to be saved or not. If you enable this option, the next time you write parameters to the unit, all saved alarms are reset.

Fig. 90: Reset alarms

14.2.6 Adjust radio

Here you can generally activate the radio or set the radio module to standby. The default setting is radio on and standby on.

NOTE

If the radio is off, the radio module does not broadcast, even if it activates itself

Fig. 91: Activate/deactivate radio

14.2.7 Meter information

In this area you can see the serial number and the current reading of the connected meter.

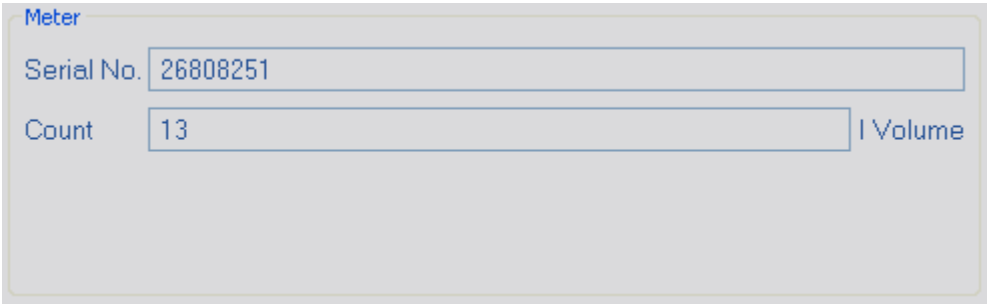


Fig. 92: Read meter reading

15 IZAR RADIO EXTERN M-Bus

15.1 Features of the IZAR RADIO EXTERN M-Bus

NOTE

The most important features are listed here. For further details on the installation, communication modules, etc., please refer to the separate installation instructions for the IZAR RADIO EXTERN M-Bus.

The IZAR RADIO EXTERN M-Bus is an external radio module with M-Bus interface. The radio module is used for optimum readouts where access is difficult.

15.1.1 Main features

- Easy installation
- Transmission of the meter data by radio to a mobile or stationary receiver
- For meter types with M-Bus interface
- On-Site programming using the IrDa interface
- Battery supply with typical life of 12 years

15.1.2 Operating principle

The IZAR RADIO EXTERN MBUS transmitter consists of an electronics unit, which records and saves meter information in the form of real meter data. Every 8 ... 16 seconds, the radio module transmits the meter number, the meter reading and various operating information. The data can be recorded by a mobile or stationary receiver (e.g. IZAR RDC STANDARD).

15.1.3 Technical specifications

Versions/frequency band	868.95 MHz
Modulation	FSK
Transmitting power	7 mW
Transmission	Unidirectional
Transmission range	Depending on the environment, up to 400 m
Programming interface	Optical IrDa
Fulfilled standards	EN 60950 Information technology equipment - Safety - Part 1: General requirements
Voltage supply	2 lithium batteries 3.6 V
Battery life	12 years (typically)
External voltage supply	AC 7.5V … 24V, I=10mA; DC 6V … 24V, I=10mA
Reading interval	Battery: daily, externally supplied: every 3 min
Transmission interval	Depending on the telegram length 8 … 16s

15.1.4 Environmental conditions

Operating temperature	°C -15 ... + 55
Storage temperature	°C -15 ... + 55
Humidity	% 0 ... 100
Class of protection	IP 68

15.2 Installing and configuring the IZAR RADIO EXTERN M-Bus

NOTE

The most important features are listed here. For further information on installing the radio module, please refer to the separate installation instructions for the IZAR RADIO EXTERN M-Bus.

15.2.1 Installing and starting the IZAR RADIO EXTERN M-Bus

- Install the IZAR RADIO EXTERN M-Bus radio module on the relevant meter using the separate installation instructions. The radio module must be activated manually.
- Use the Bluetooth opto-head of Diehl Metering and activate your Bluetooth connection (see Section 4 Connect devices with IZAR@SET).
- Start the IZAR@SET software.
- Use "Optical devices" to read out the radio module.

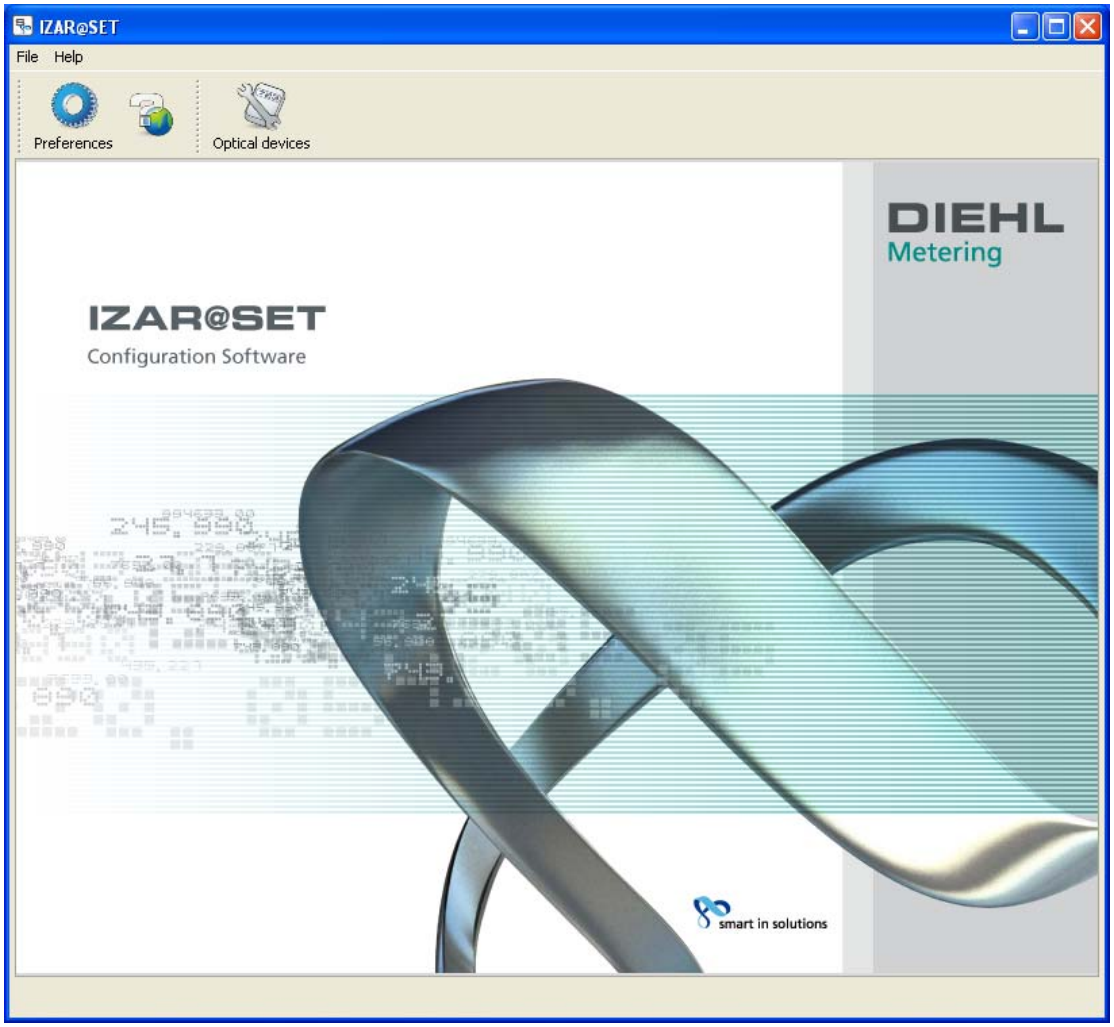


Fig. 93: Read out the device

The Parameters tab card opens. Here you can set the parameters of the radio module.

15.2.2 All Parameters tab card overview

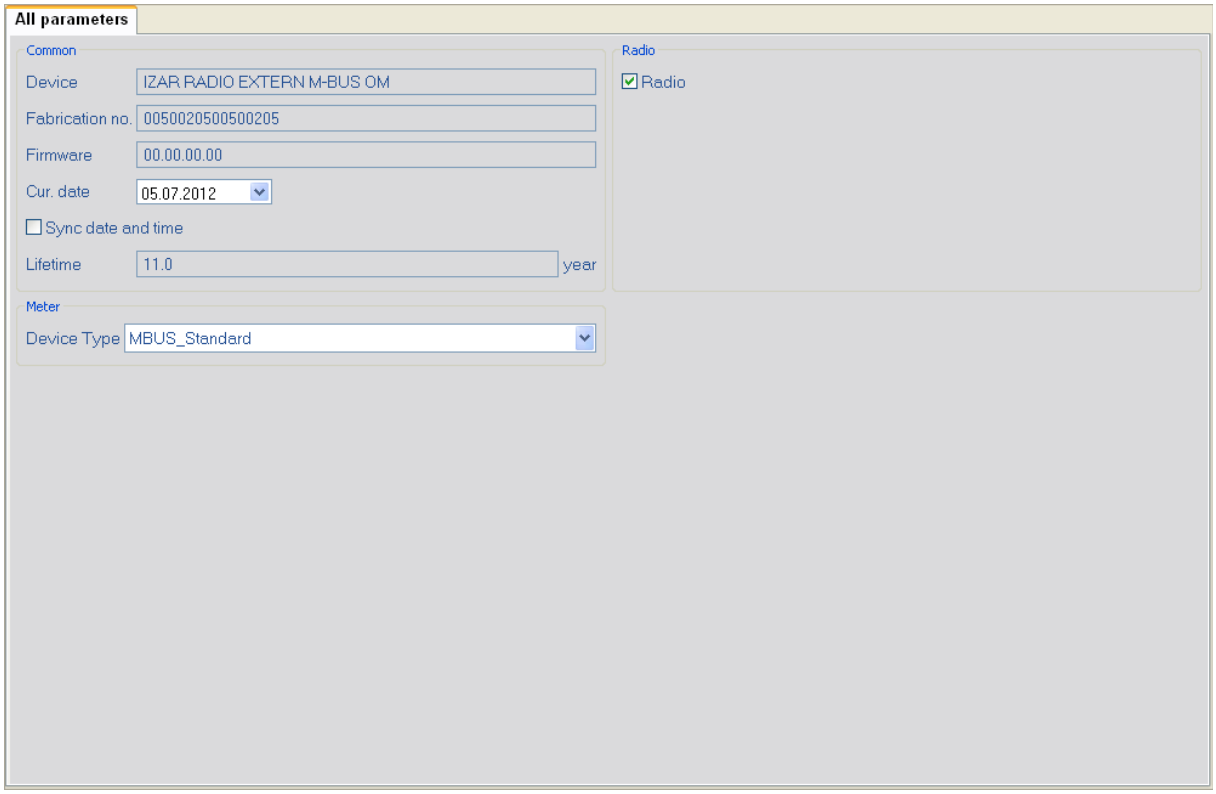


Fig. 94: All Parameters tab card

The parameters of the radio module are divided into three areas: Common, Radio and Meter. Here you can set the parameters or read information.

15.2.3 Common information

The *Common* area displays the device name and the life. You can also read and set the date.
When you enable the *Synchronise date and time* function, the date and time are compared with your laptop or PC, as soon as you click *Write*. The life shows the calculated life of the radio module.

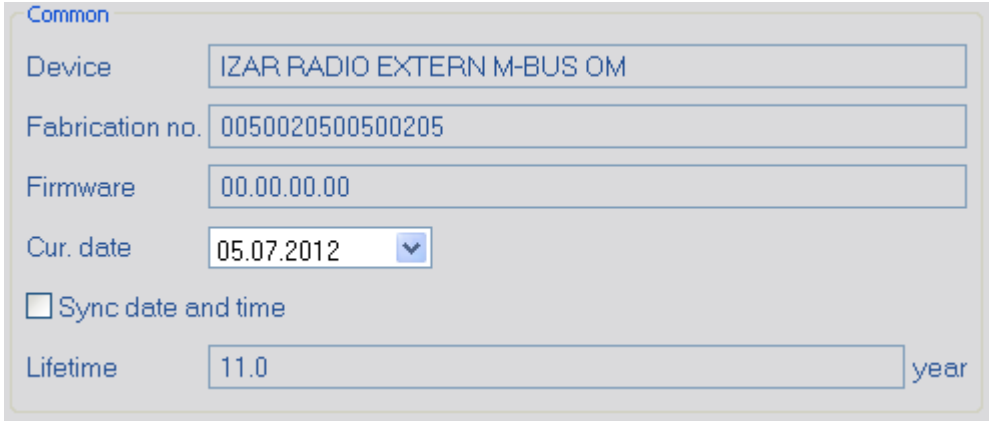


Fig. 95: Common information

15.2.4 Adjust radio

Here you can generally activate the radio and therefore start up the radio module. The default setting is Radio Off.

NOTE

If the radio is off, the radio module is shutdown. It does not transmit and also does not read the meters.

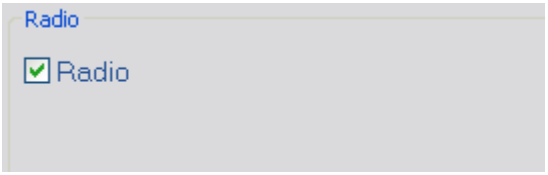


Fig. 96: Activate/deactivate radio

15.2.5 Meter information

In this area you select the type of connected device. The normal reading takes place via "*MBUS_Standard*"

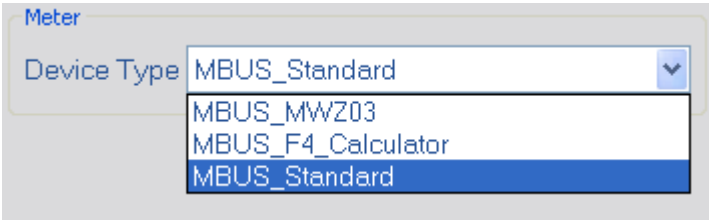


Fig. 97: connected device

15.2.6 Read meter readings

The radio module automatically transmits the meter number, the meter reading and various operating information every 8 to 16 seconds. The data can be recorded by a mobile or stationary receiver